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JUNE 2015 VOL. 67, NO. 6

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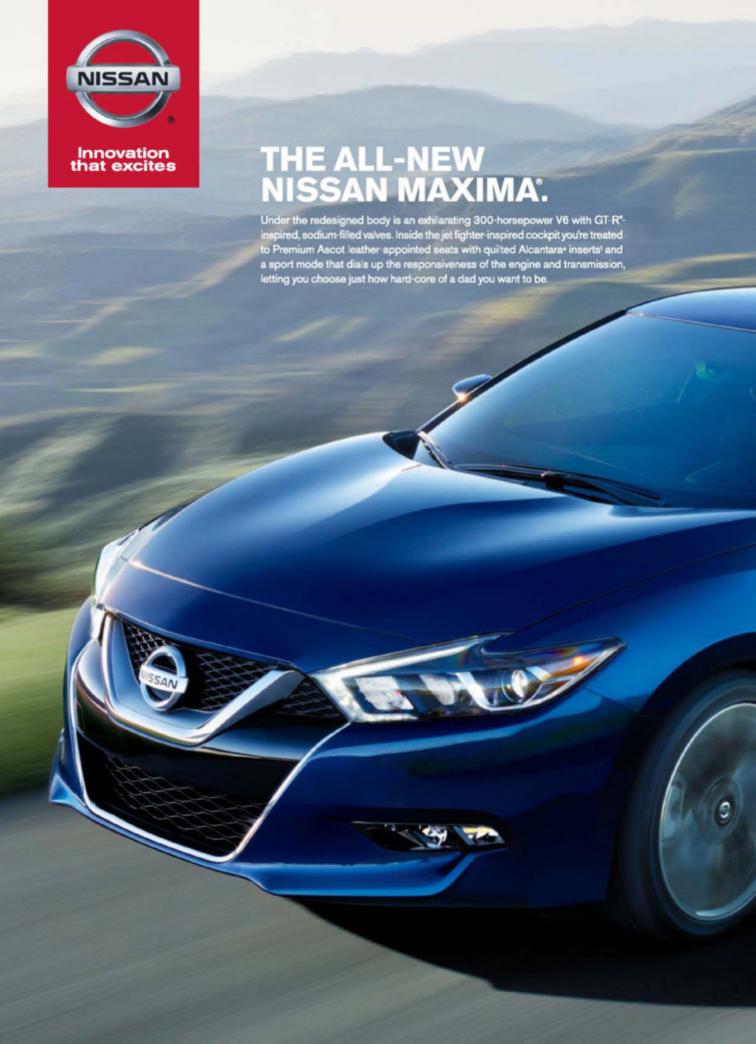


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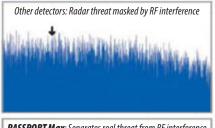


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COVER STORY











AMERICAN 36
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2015 Dodge Charger SRT Helicat VS. 2015 Tesla Model S P85D

The world's quickest sedan and the world's fastest face off.

Jonny Lieberman and Christian Seabaugh







>TESTS & DRIVES



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The Lohdown



President Lincoln Goes to China

Lincoln has been promising four new vehicles by 2016, and the stunning Continental concept on our cover is a tantalizing look at what could be the fourth, and the flagship, model.

"The campaign has gone very, very well. When we had started the journey with MKZ, we had planned and promised four products. The first three were the MKZ, the MKC, and the MKX ... And the promise is that the fourth vehicle would be a sedan, which is going into production next year," says Kumar Galhotra, president of Lincoln Motor Company.

Many of you started asking for the return of the Lincoln Continental moments after the nameplate went away in 2002, and now it's back—in glorious form. But do you know whom you have to thank? China.

Lincoln is one of the most recent automotive brands to enter China, but the response has been remarkable.

"We started opening stores in November. We opened nine last year and opened three more this year; we will be up to 25 stores by the end of this year ... up to 60 stores by the end of next year," says Galhotra. "And the throughput on those stores has just been

上生

RIGHT FIT Kumar Galhotra previously led a Ford team seeking to introduce more than 50 new vehicles and powertrains to Asia and Africa.

phenomenal. In January, three of the top 10 stores globally were in China. And keep in mind they are selling only two products: the MKZ and MKC."

Brand perception has been key to Lincoln's initial success. "The favorable opinion is actually ahead of Lexus," says Galhotra. "The perception of prestige is ahead of Audi. And keep in mind Audi has been there a couple of decades and is the official state car—almost."

Lincoln's rich history with heads of state and celebrities also plays a huge role, says Galhotra. "The heritage is huge. My previous job was head of product development in Asia Pacific when we first started planning for Lincoln [in China], so I was there for several research events, when we were researching both products and the brand. [The Chinese] were raising the heritage in every focus group; they thought of it as presidential. So much so that we're calling Black Label [Lincoln's premium ownership and service program] Presidential over there. We tested both Black Label and Presidential, and they were really, really [for] Presidential," says Galhotra.

"They talked about movie stars," he continues. "I was impressed by how much they knew ... that Frank Sinatra had [a Continental Mark II]. I heard a story from a Chinese national about Elizabeth Taylor, how her studio had painted a Lincoln to match her eye color. That kind of stuff is very well-known."

But more important, says Galhotra, is that Chinese consumers demand a large sedan.

"We launched only the MKZ and the MKC there, and they're doing well. The mix of the C is nearly 70 percent primarily because SUVs as a total in the entire Chinese market are on a tear ... especially luxury SUVs. But for the sake of space and prestige, sedans still carry a bit of prestige in China, especially in the luxury market. They are very much looking forward to a large sedan ... Especially for people who

have chauffeurs and ride in the back seat. That's a really big deal, and we took that into account."

To be clear, Lincoln had always planned for the fourth vehicle to be a sedan, and we in the peanut gallery had

always assumed it would be the replacement for the MKS. But to bring back the Continental nameplate after five alphabetized models is inspired—apparently by China's nostalgia for 1960s America.

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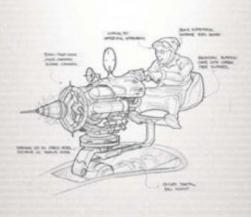
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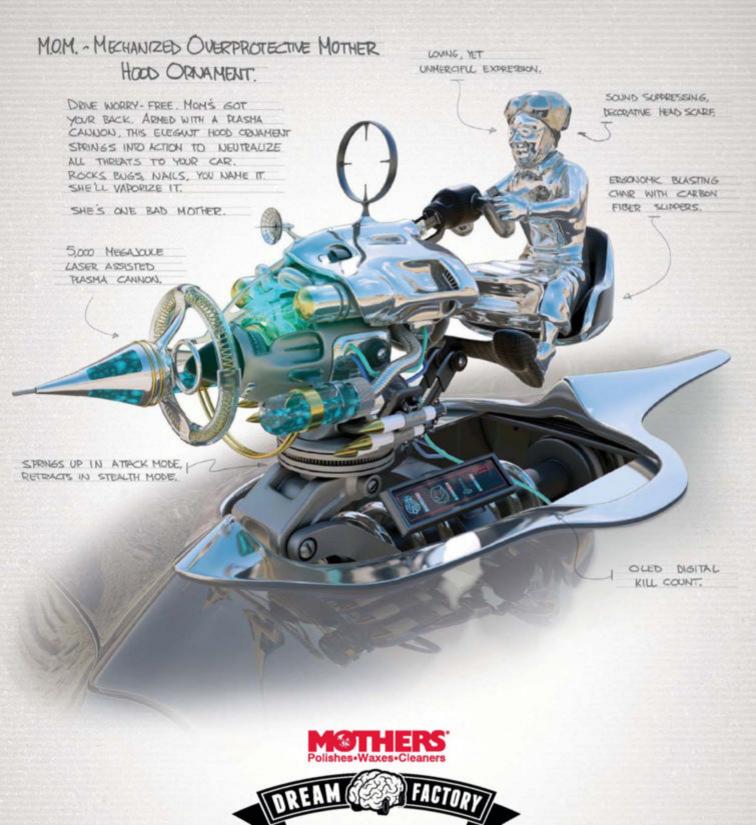








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At Mothers, we're always thinking of ways to make the world a better place for cars. And while some ideas may never make it onto the shelves, rest assured, we'll never stop innovating.



TREND6.15

INTAKE P12
THIS MONTH'S HOT METAL

WE SAY P24
WORDS FROM OUR EDITORS

DETOUR P30 GEAR, FACTS, INFO

2016 Chevrolet Malibu

THE NINTH-GENERATION MALIBU GETS LONGER, LIGHTER, AND BETTER



Chevy took its lumps with the last-generation Malibu, but that seems to have inspired the company to pull out all the stops for the all-new 2016 Malibu. Under the seriously handsome new sheetmetal are a number of changes sure to

The first is right in the

appeal to customers.

middle. The wheelbase has been stretched 3.6 inches, and the car is 2.3 inches longer overall. All of that extra length goes to the rear seat, whose size was a big complaint for the old car. Despite the size increase, Chevy says the new car is almost 300 pounds lighter than the one it replaces.

The reduced weight should

pay dividends when combined with the updates under the hood. The old 2.5-liter four-cylinder is gone, replaced by an all-new 1.5-liter, turbocharged four-cylinder. Power output was not available at press time, but Chevy says torque will be similar to the old engine's 186 lb-ft. It will drive the front wheels with

a six-speed automatic transmission and achieve a Chevyestimated 37 mpg highway.

There are two ways to upgrade the powertrain. For the efficiency-minded, the all-new Malibu Hybrid features a modified Chevy Volt powertrain. A 1.5-kilowatt-hour lithium-ion battery provides power for



THEY SAY P32 INTERVIEW JEAN-MARC GALES, CEO LOTUS

YOUR SAY P34
READERS TALK BACK

Honda Civic Concept

"THE RETURN OF THE SPORT ENTHUSIAST'S VEHICLE"

ALTHOUGH IT SOLD fairly well, the ninth-generation Honda Civic never quite lived up to Honda's high standards. That's all in the past now with the unveiling of the new Civic "Concept." Honda says it signals a return to the Civic's sportier, more aggressive past.

The quotation marks are ours because this is basically the next-gen Civic Si Coupe. No details were available at press time, but we think Honda's all-new turbocharged engines are in store. Figure the roughly 130-hp, 1.0-liter three-cylinder turbo as the base engine and either the roughly 200-hp, 1.5-liter

turbo-four or naturally aspirated,
2.4-liter four in the sporty Si. Cross
your fingers for the 300-hp, 2.0-liter
turbo in a Type R model. A CVT is
likely for the base car, with an eightspeed dual-clutch or six-speed
manual serving the hot
cars. Scott Evans

"CONCEPT" Honda concepts
tend to be the finished cars
with silly door mirrors and
such. The production car will
look a lot like this.

The 2016 Malibu is 2.3 inches longer and almost 300 pounds lighter.



all-electric driving up to 55 mph, after which a 1.8-liter four-cylinder engine adds power to the wheels and generates electricity. Altogether, Chevy predicts more than 45 mpg combined. For the performance-minded, the Malibu retains its 2.0-liter, turbocharged four-cylinder

option mated to an all-new eight-speed automatic. Chevy estimates 22 mpg city and 32 mpg highway, slight improvements from the current Malibu Turbo. No official power output is available yet, but we think it'll be similar to the current car's 259 hp and 295 lb-ft.

The Malibu features an all-new interior with better materials and electronics. A 7-inch touchscreen is standard, an 8-inch optional. Chevy says the infotainment system is up to two times faster than before. Also available are myriad active safety features, wireless phone

charging, ventilated seats, and a Teen Driver feature that allows parents to restrict some driving functions and monitor driving behavior. 4G LTE with a Wi-Fi hot spot comes standard, and additional rear-seat USB ports and a 110-volt outlet are optional.

Scott Evans

TRACK RETEST

OPENING SPREAD
Our March 2015
story pitted the
Camaro Z/28 vs. the
Porsche 911 GT3.



THE WONDER OF WICKER

For as much as Randy Pobst typically has to say about a car, he doesn't often use walkie-talkies. We always stick one in the car before he goes out in case of emergency, but he rarely uses it. So you can imagine our surprise when, during his cool-down lap, Pobst's voice suddenly came crackling over the radio, gushing about the Z/28.

"Oh my God, you fixed it!" came the voice. "This is so much better. It's back. This is how it should perform. We were so right to name this car Best Driver's Car." You can also imagine Pobst's surprise when we told him how little we'd changed. A new set of tires, a double-check of the alignment, and oh, yeah, that little wickerbill bolted to the spoiler now.

"That little thing?" Pobst said.

"I can't believe it's doing that much." "That much," quantified, is 1.32 seconds. Our long-term Z/28, which has been in our possession since well before it squared off against the Porsche 911 GT3 for a comparison in our March issue, improved its lap time at Willow Springs International Raceway's "Big Track" from 1:29.72 to 1:28.40 thanks almost entirely to a composite flap literally screwed to the back of the rear spoiler.

Just to be sure, we asked Chevrolet test driver Jim Mero. "Oh, absolutely," he said. "It makes a big difference. It affects everything down to 40 mph." Going to the data, the difference was easy to spot. With the wickerbill affixed and the rear end tamped down, Pobst was back on the power earlier and harder exiting Turns 2, 4, 6, and

9. Additionally, he carried higher speeds through the long and tricky Turns 8 and 9.

It's an improvement you can feel. Up to now, I believed I could feel a difference in how the Z/28 rode and handled just going around a freeway cloverleaf ramp with the wickerbill installed, but I couldn't be certain. The rear end simply feels more planted, less jittery with that little flap on there. Pobst agreed, emphatically.

"It's funny—it was loose and sucky last time," he said. "Now, it's so hooked up. It's back to the car we chose for Best Driver's Car. [That car had a wickerbill.] It is so well-balanced. It's predictable. What a pleasure to drive. I could just attack Turn 8. I was in the power way in there—forget about the brakes. It just felt so fast. It handles so well. The grip is so high. It's the car we love again.

"Last time, it was loose," he said. "It wouldn't put power down. It was just kind of nervous. This time, it was just fantastic in every way. It was balanced all the way around the Turn 2 sweeper, maybe just a wee bit of understeer, and at the end of the corner, I could just roll into the power, drive right off that corner. I kept getting on the power sooner and sooner and sooner and sooner if m pissed I can't go faster because I think the tires just don't have it in them.

"The car is nicely behaved on bumps," he continued. "Over the jump [in Turn 6]—no problem. I was shifting right in the air, and when it landed, it just hooked and kept going. It's one of the best-handling factory cars I've ever driven. I wouldn't change the car a lick if I was gonna go racing right now. I would leave it exactly as it is. I would just tie the crew's hands up, like 'Don't you touch this car!' It's perfect."

It should be noted that although the wickerbill would've made it a closer fight, it wouldn't have necessarily changed the outcome of the comparison test. The GT3 still put down a 1:27.22 lap time, which is 1.18 seconds better than the fully equipped Z/28, and did it with less power and torque. As we said last time, Chevy's still got a few tricks to learn, and they're still working from a less-ideal platform than the Porsche team.

At \$395 for a piece of composite plastic plus installation (\$117 at our local dealer), the wickerbill is a rather expensive dealer-installed accessory. Viewed in terms of the proven added performance, it's a steal. If you're paying \$75,000 for a Z/28 anyway, you really can't afford not to buy the wickerbill, too. It's the difference between a really good Camaro and a Best Driver's Car champion. **Scott Evans**



It's the difference between a really good Camaro and a BDC champion.

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TRACK RETEST

CORVETTE, THE REDEEMER



With those words, our highly anticipated comparison between the Chevrolet Corvette Z06 and the Nissan GT-R NISMO, our April cover story, took a serious turn. On paper, the Z06 should've schooled the NISMO. In the real world, it didn't, and that was the biggest factor in tipping the test toward the NISMO.

It certainly didn't seem right to us, and we said so. The Z06 has power, weight, grip, and braking advantages, but it was 1.4 seconds slower around Willow Springs International Raceway's "Big Track." Because the Z06 was slower on the straights while being quicker mid-corner and braking later, we assumed excessive drag from all the downforce the aero kit was making had to be the reason the Z06 was slower.

Turns out we were wrong.

The real reason the Z06 was slower was because Chevrolet gave us a car with the rear suspension out of alignment. It



"Way better than it was last time!" Pobst yelled as the door swung open. "This was so much nicer to drive. Oh my gosh. The butterflies are gone. The fear is gone."

was supposed to be running 0 degrees of rear caster. Instead, it was running positive 2 degrees. This made the rear dampers less effective at controlling the rear suspension and as a result made it more difficult for the Z06 to put power down. This is exactly what *Motor Trend* hot shoe Randy Pobst complained about during our test.

Let's answer the obvious question then: How does the Z06 perform when the rear end is aligned properly? Better. Much better. Recall the car previously did a good-but-not-great 1:27.10 during our comparison test.

This time? 1:25.00. A massive 2.1-second difference.

It should be noted, however, that Chevrolet fixed more than the rear alignment. As a result of new testing at rough tracks like Willow Springs, Chevrolet developed a new Rough Track mode that softens the dampers for the Z06 in Track mode. Chevrolet plans to make this software update available soon through the GM Performance

Parts catalog, and our retest cars were both fitted with the new software. We cannot say, then, that the improvement in lap time was due solely to the corrected rear alignment, as it's possible the new damper programming also aided the ZO6's performance.

"The ride was far better than the last car I drove, in Track mode," Pobst said. "It made it so much easier to drive. It was still firm. But I don't think the ride was really that important. I think it's that alignment issue because I don't get that rear steer anymore. The car is still, in my opinion, a little bit oversteer-y. It should be, in my opinion, a little bit understeer-y, especially so you can keep your foot in it when you're going around a corner—you can use more power-so it doesn't go to oversteer as quickly."

Back to the lap. The data revealed our assumptions about the aerodynamics were wrong. The Z06 was faster on the straights than before but still not as fast as the NISMO. It gained



COVER STORY In our April 2015 issue, we pitted the Chevrolet Corvette Z06 against the Nissan GT-R NISMO, with the GT-R coming out on top.

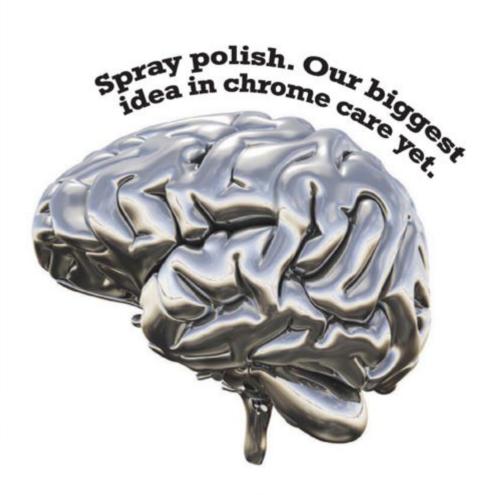
mightily at corner exits. Now able to put power down more effectively, the Z06 exited Turns 2, 6, and 9 faster, making up precious time there and on the straights that followed. Pobst's renewed confidence in the car's handling also allowed him to carry more speed through dicey Turns 8 and 9. Over the course of his fastest laps, Pobst carried more speed with the Z06 than the NISMO through turns 1, 2, 8, and 9.

"Way better than it was last time!" Pobst yelled as the door swung open. "This was so much nicer to drive. Oh my gosh. The butterflies are gone. The fear is gone. There was a lot of fear in the car before. Just the handling, I trusted it way more. I still don't experience a push anywhere really balanced."

Still, there was one hang-up: the four-five upshift. "It is a little tricky to hit fifth gear. The first lap, I got the wall between fifth and seventh. So I practiced it. The next lap, I tried it and got third. Then the next lap, I didn't need it, and I was like, 'Crap, I wasted my 4 extra mph fifth would've given me.'"

Critics of our comparison





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LOCKOUT A lockout to prevent catchin seventh instead of fifth in Track mode would be a welcome improvement.



also pointed to the Z06's manual transmission as a performance inhibition, suggesting the new eight-speed automatic (which we requested but wasn't available) would perform better. As it happens, we also had an automatic-transmission test car on hand this time around. It too featured the proper suspension alignment and the new Rough Track calibration. Pobst gave it a go, and the result was a best lap of 1:25.76.

From the data, we find the automatic-transmission car was very consistent with the manualtransmission car. In fact, the automatic reached higher peak speeds than the manual on the

front and back straights, though still not as high as the NISMO. The manual, however, carried more speed through tricky Turns 8 and 9. Pobst believes the manual's taller gears also helped, particularly when coming down the hill through Turns 4, 5, and 6.

"The automatic is really easy," Pobst said. "It makes it so easy. Except on the first two laps, it got lazy on the three-four shift coming out of 9. Drove me crazy, but then it went away. It was on full automatic, and it hung on the redline. It's pretty sweet, other than that. Man, it works great."

As Pobst drove the automatictransmission Z06 first, we believe his familiarity with the

car and the track ultimately led to the faster lap time for the manual. That said, Corvette chief engineer Tadge Juechter recently told Corvette fans that the automatic transmission runs hotter and will go into a preservation mode sooner, so he recommends the manual for serious track duty or when the ambient temperature at the track is above 86 degrees. The high ambient temperature on our test day was 70 degrees.

We agree with that call for a serious track day enthusiast. As in previous tests, the Z06 got very hot during lapping and pulled power. Per Pobst: "The power starts to fall off significantly after the first lap. It was nearly pegging the oil temp gauge after a few laps-320 degrees. I did a cool-off lap, and it came right back down."

We checked the data, and lap times and peak speeds did fall off by a few tenths of a second and 1 or 2 mph on each subsequent lap, though these could also be attributed to tire wear and other factors. Although Pobst has consistently complained of reduced engine power when lapping C7 Z06s, the problem does not appear to be especially great (in terms of lap times) and

only seems to affect drivers of Pobst's incredibly high skill, suggesting that most customers won't encounter it.

Which transmission would he choose? "Automatic because of that fifth gear [that he had trouble getting into]. If I'm at a track where I don't need fifth, I might prefer the manual because I like the level of control."

Regardless, the results are clear. When properly aligned and using a softer damper calibration, the Corvette Z06 is as fast as or faster than the GT-R NISMO at Willow Springs. All said and done, the manual Z06 ran a 1:25.00 and the automatic a 1:25.76 to the NISMO's 1:25.70.

The big question, then, is whether to reverse the result of the comparison test. As you'll recall, the decision was extremely close, and what ultimately tipped the balance in favor of the NISMO is that its performance came despite its disadvantages. As noted in that test, "It's working with an older chassis, significantly more weight, less powerful brakes, less tire, less power, and much, much less torque." In that regard, nothing has changed. It's also almost as fun to drive on the street and nearly as fast as the Z06 on a racetrack.

Carlos Lago and I have debated the subject, and we agree it's simply impossible to say without putting both cars back-to-back again. Based on the information we have, the best we can do is declare a mistrial rather than overturn on appeal. Scott Evans



The manual ZO6 ran a 1:25.00 to the GT-R NISMO's 1:25.70 at Willow Springs.



Intake

SPORT UTE Few SUVs have the handling chops of the new Cayenne GTS, but if it's outright power you want, the Cayenne Turbo S is for you.



2016 Porsche Cayenne GTS/Turbo S

decommissioned military base in Sweden, and there are no signs of the planes, heavy artillery, or troops that were here years ago. Today, there's only the sound of brand-new Porsche Cayenne GTS and Turbo S models being flogged on a frozen handling course, icy skidpad, and a snow-covered runway that's been converted into an impromptu dragstrip. Oh, and former rally ace Walter Röhrl is giving very sideways ride-alongs in a 911 Turbo S on a makeshift winter rally course.

It's the dead of winter at a

But we're really here to sample two of Porsche's sportiest sport/utility vehicles. Both badges have finally made their way to the new Cayenne range, and both bring some changes. The GTS has lost its naturally aspirated V-8 for a souped-up 440-hp version of the 3.6-liter, twin-turbo V-6 found in the Cayenne S. The engine makes more power than before with reduced emissions, but most important, it retains a healthy snarl thanks to the standard sport exhaust. Cayenne Turbo brakes and front fascia, along with 20-inch wheels and a host of other cosmetic touches, make the GTS look the part. (An eight-speed automatic is the exclusive Cayenne transmission.)



Meanwhile, the Turbo S, through a host of revisions, is up to a staggering 570 hp and 590 lb-ft from its 4.8-liter, twin-turbo V-8, enough power to make a valiant effort in melting any ice beneath its tires. Huge carbon-ceramic brakes under 21-inch wheels and air suspension are standard equipment.

After a day spent mostly sideways in both GTS and Turbo S models, we draw a few impressions. The Turbo S is massively quick,

even on ice, and it looks and feels like the top-line sport/ute it is. But the GTS is the more nimble, better balanced, Goldilocks solution in the Cayenne line. It's still plenty quick for U.S. roads, and it sounds fantastic with that sport exhaust. It's our pick for those without an autobahn in their backyard. **Rory Jurnecka**



2016 PORSCHE CAYENNE GTS/TURBO S Base Price \$96,495-\$158,295 **Vehicle Layout** Front-engine, AWD, 5-pass, 4-door SUV **Engines** 3.6L/440-hp/442-lb-ft twin-turbo DOHC 24-valve V-6; 4.8L/570-hp/590-lb-ft twin-turbo DOHC 32-valve V-8 **Transmission** 8-speed automatic **Curb Weight** 4,650-4,950 lb (mfr) **Wheelbase** 114.0 in **L x W x H** 191.1 x 78.7 x 65.5-69.2 in **0-60 mph** 3.8-4.9 sec (mfr est) **EPA City/Hwy/Comb Fuel Econ** 14-16/21-23/17-19 mpg (est) **Energy Cons, City/Hwy** 211-241/147-160 kW-hrs/100 miles (est) **CO2 Emissions, Comb** 1.05-1.18 lb/mile (est) **On Sale in U.S.** Currently

MIKE CONNOR MTCONFIDENTIAL

We initially dismissed rumors of the Apple Car, but now we're hearing word that it's much further along than people realize. Apple has hired away the team that developed the HySeries Drive hydrogen fuel cell plug-in hybrid technology at Ford circa 2007. The technology was revealed in the Ford Airstream Concept, an electric car with a hydrogen fuel cell range extender good for 305 miles of total range. The story goes that everyone within Ford was very high on this Chevy Volt-beating technology, but **CEO Alan** Mulally quashed it when he showed up because Ford was going big on gas/ electric hybrids. Apple is also said to be sniffing around for an automotive PR team...Speaking of high-tech stuff, Nissan is preparing a built-in data logging system for the GT-R. We expect Nissan to announce the system sometime in the near future. It will record performance and lapping data and download all that information to a standard USB thumb drive via a dedicated port in the center armrest. You can then upload the data to your computer to analyze. We've heard no word yet whether Nissan will create its own analytic software or contract it out like Chevrolet did with the Corvette's similar Performance Data Recorder and Cosworth software...In other performance news, FCA senior vice president for product design and **SRT patron saint** Ralph Gilles says he has one more Hellcat-related surprise for us this year. We'd love to see a **Grand Cherokee Helicat**, but we're not convinced its all-wheel-drive drivetrain can handle 650 lb-ft of torque. Unfortunately, the Jeep might be out as an option, but we're beginning to hear whispers of a Hellcat with horns. How does a Ram Hellcat sound?...On the subject of large vehicles with monster engines, we've learned a smidge more about the upcoming Rolls-Royce Wraith convertible (or Drophead, as Rolls likes to say) that's been spotted testing. It will make its debut later this year with sales starting in 2016. Expect it to cost a bit more than a standard Wraith, or somewhere north of \$300,000...Regarding variants, things are looking grim for the long-awaited Mazda6 diesel. The car has been delayed as Mazda struggles to meet emissions and performance goals, and the fight isn't going well. Rumor has it that the engineering team behind the Mazda6 diesel program has dwindled from a couple dozen to fewer than 10 in the past year, signaling that the bean counters might be giving up on the project and reallocating resources to more profitable ventures. We're holding out hope for a breakthrough.



Intake

2015 Mercedes-Benz S65 AMG Coupe

The S65 AMG Coupe is gorgeous, inside and out. The interior is the finest I've ever seen on a production car, full stop. The \$1,300 Designo Black Piano Lacquer "Flowing Lines" trim framing the dashboard is stunning. The lines fan out like a comet's tail, reminiscent of the brightwork on prewar deco cars. The unique curved dash reminds me of a Pagani Huayra's, the second finest interior extant. You like those gorgeous, drilled Burmester speaker grilles? The S65 Coupe is simply stuffed with them. The ample, comfy,



massaging seats are not only massively adjustable, but they're handsome, too.
You can probably get a similar interior in an S63 or (God forbid) an S550 Coupe. Let's talk about what makes the S65 come with a

an S63 or (God forbid) an S550 Coupe. Let's talk about what makes the S65 come with a starting price of \$233,525. Namely, that handbuilt 6.0-liter, twin-turbo V-12 that produces 621 horsepower and 738 lb-ft of torque. Internally known as the M275, this V-12 has been around for more than a decade, but 738 lb-ft of torque is 738 lb-ft of torque. You know of any other 4,753-pound RWD

coupes that can hit 60 mph in 4.0 seconds flat? I did not think so. Not that it matters to anyone in the world, but this big, beautiful, sparkling AMG completes our figure-eight course in 24.9 seconds, exactly the same as a Volkswagen Golf R.

Let's not overlook Dynamic Curve, part of the tragicomically named Magic Body Control suspension. MBC uses the built-in stereo cameras to look at the road surface ahead and adjust the suspension accordingly; I like to think of it as speed bump





6.15 **TREND**

delete. Dynamic Curve looks at the twists and turns ahead and actively leans the S65 Coupe into a corner. The results, while not exactly magic, are close. The overall sense of suffocating luxury is increased to drowning when you smoothly and confidently tackle a convoluted canyon. Think of it as image stabilization for a car.

The Bentley Continental and Rolls-Royce Wraith are also big, sexy, expensive coupes with even more impressive badges. But can I honestly claim they're better cars? Not anymore. **Jonny Lieberman**

SPECIFICATIONS Base Price \$233,525 Price As Tested \$252,675 Vehicle Layout Front-engine, RWD, 4-pass, 2-door coupe Engine 6.0L/621-hp/738-llo-ft twin-turbo SOHC 36-valve V-12 Transmission 7-speed automatic Curb Weight 4,753 lb (53/47%) Wheelbase 115.9 in Length x Width x Height 198.6 x 76.0 x 56.0 in 0-60 mph 4.0 sec Quarter Mile 12.3 sec @ 117.8 mph Braking, 60-0 mph 106 ft Lateral Acceleration 0.92 g (avg) MT Figure Eight 24.9 sec @ 0.82 g (avg) EPA City/Hwy/Comb Fuel Econ 13/21/16 mpg Energy Cons, City/Hwy 259/160 kW-hrs/100 miles CO2 Emissions, Comb 1.24 lb/mile







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We Say...



Ron Kiino THE KIINOTE

Two (SUOTYs) for the Road From Sendai to Kyoto in our recent winners

As part of our Sport/Utility of the Year competition, participating automakers agree to provide us with a long-term vehicle, should their SUV win. Not only does this arrangement give us 12 months to fully assess the champ's pros—and inevitably its cons—but the lengthy loan also paints a more complete picture of why the SUV earned the coveted golden calipers. Recently, I had the opportunity to sample our past two award-winning SUVs, the Subaru Forester (2014 victor) and the Honda CR-V (2015)—not in sunny SoCal, but in my temporary home of wet and chilly Japan.

Our first road trip took my wife, Diane, me, and our two kids—5-year-old Julian and 2-year-old Coletta—from Tokyo to Sendai, roughly a four-hour jaunt. Our transporter? A limited edition 2015 Subaru Forester X-Break dressed in Desert Khaki paint. The JDM version, unlike the U.S. Forester's 2.5-liter FB25 base engine, uses the smaller 2.0-liter FB20 that motivates American Imprezas. In the larger Forester, the FB20 felt plenty adequate, offering enough gusto to make our loaded-up X-Break feel more potent than poky, if only slightly. About halfway to Sendai, we veered toward the Numajiri snow park to grab hot coffee and let the kids play

in the powder. Traversing the white fluff up the narrow mountain road would've been a white-knuckle endeavor had it not been for the Forester's trusty X-Mode AWD and set of Michelin X-Ice tires. About as sure-footed as a badger, the Forester reminded me why Subaru is so popular across America's snowbelt.

Following a dozen sled blasts down the slopes and four hot bowls of ramen, we were back on the road in the warm, quiet confines of the X-Break. If the Forester isn't the quietest small crossover out there, it's certainly in the top three. The kids knocked out within minutes, thanks in part to a hot cocoa coma. Note to Subaru: Bring the X-Break's water-resistant cloth seats to the U.S. Snow and spills are rendered harmless.

We said sayonara to Sendai and then to the Forester. After dropping off the X-Break at Subaru HQ in Ebisu, I headed straight to Honda HQ in Aoyama. Iguchi-san, my Honda PR contact, informed me McLaren-Honda F1 pilot Jenson Button and wife Jessica Michibata had borrowed this exact CR-V for a getaway to a Hakone hot spring the week prior. My family's trip to Kyoto, I thought, wouldn't be quite as serene or romantic.

After just a few miles behind the wheel, I noticed something strange: the transmission was shifting. "Man, this CVT isn't that smooth," I mumbled to myself. I asked Diane to check the spec sheet in the door pocket. It was mostly in Japanese, but when she read "5AT," it became clear. Apparently in Japan, the CR-V is viewed as large and expensive—the opposite of how it's seen in the U.S.—which equates to sales of less than 4,000 per year, or about how many are sold over four days in America. Thus the JDM CR-V is last in line for the mid-cycle refresh (DI engine, CVT) that helped the U.S. version secure our trophy. Still, my five-speed tester possessed most of what made the CVT model our SUOTY winner: a spacious back row with a nifty "Magic Seat" flip/fold feature, a cavernous cargo area with a low load floor, and a rewarding chassis infused with the sporty lightness that makes a Honda a Honda.

Back home, I asked Julian which he liked better, the Forester or the CR-V. "I think I like the Forester." Why? "Because it was that cool sand color." Sometimes a 5-year-old's logic makes all the sense. Rest assured, whether in Japan or America, both are winners.





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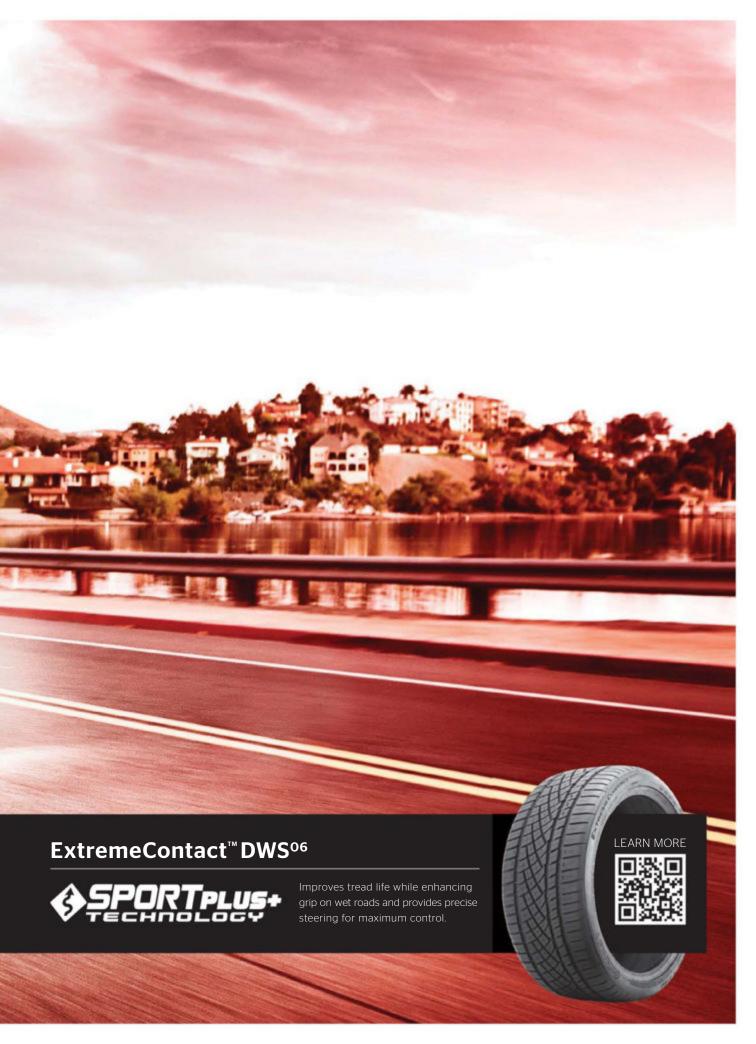


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Frank Markus **TECHNOLOGUE**

Dissecting Chevy's 2nd-Gen Moonshot

When Chevy unveiled the thoroughly revamped Volt at January's Detroit show, it kept the geekosphere in suspense about the nittygritty details of the upgraded powertrain except to say it involved two traction motor/generators and a new double planetary gearset. Well, now the SAE papers are published, and they describe a technological leapfrogging on the order of Gemini Titan over Mercury Redstone.

To improve performance, sustainability, efficiency, and cost, two very different types of permanent magnet motors were engineered with differing, complementary load/speed "sweet spots." To eliminate rare earth metals, the smaller motor (A) uses simple ferrite magnets. Arranging them in what look like a dozen little four-row amphitheaters around the circumference of the rotor optimizes both magnetic and reluctance torque so that these cheap iron-oxide magnets can pull more like their fancy rare earth cousins, with peak efficiency at low torque in the 5,000-9,000rpm range. On the larger motor (B), novel metallurgy helps concentrate the heaviest dysprosium rare earth material near the corners of the magnets where it does the most good, and arranging these magnets in a dozen double-vee cavities around the rotor likewise optimizes their efficiency. This motor's sweet



WOUND UP Instead of winding typical round wire, GM uses square bars, which improve cooling and boost efficiency.

spot is at higher torque from about 2,000-4,000 rpm. The system uses 80 percent less total rare earth metals with 50 percent less of the heavy stuff than the first-gen.

Here's the über-geek gearset detail in one paragraph: Each motor connects to a sun gear. The planet carriers connect directly to the wheels. One clutch locks the B motor's ring gear to the case, another can lock the A motor sun to the B motor's ring gear, and the engine connects to the A motor's ring gear while a one-way clutch prevents the engine from ever turning backward, essentially locking it when the engine is off.

The extra motors and gears provide two modes of electric and three modes of range-extended driving. The EV modes are B-motor only (light loads and lower speeds, through an 8.1:1 ratio) and A and B pulling together. (The A ratio is 7.6:1.) In both cases that B ring clutch stays locked. The three modes of gas-powered operation are low, fixed-ratio, and high. In fixed-ratio both clutches are locked, grounding the A motor to the case so that the engine drives the wheels directly through a 1.5:1 gear

Low mode locks the B ring, and high mode locks motor A and the B-ring to the case. In each of these modes, the two motors can spin in either direction with infinitely variable gear ratios, adding torque or returning electrons to the battery as needed, such that the total net axle torque meets the driver's demands.

A system optimizer selects between these modes 100 times per second. In extended-range (engine-on) mode, one-motor EV operation accounts for 73 percent of the city-cycle operation, and high mode handles 75 percent of highway operation. Fixed-ratio operation accounts for just 9 and 12 percent of the city and highway driving cycle operation. But in all cases, the transmission keeps the new 1.5-liter four operating at peak efficiency under most conditions, which usually means at lower (quieter) speeds.

The new battery packs 12 percent more energy and weighs 21 pounds less-total vehicle mass was reduced nearly 250 pounds. The more efficient Volt goes 50 claimed miles on electricity and accelerates much harder. Even the onboard charger is 7 percent more efficient. It's the most advanced plug-in hybrid on Earth. Another leapfrog of this magnitude would take Voltec 3.0 to Apollo Saturn V status—a moonshot, indeed. ■



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Odd-looking magnet placement (R) optimizes field strength and reduces the need earth metals.



This more efficient Volt now goes 50 miles on electricity and accelerates much harder.

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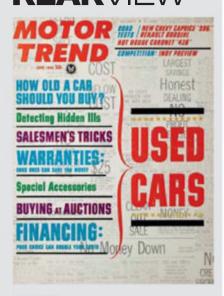


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06.15 **TREND**

From the *Motor Trend* Archive... **REAR**





JUNE 1965 PRICE: \$0.50

We ran a series of features to educate buyers of used cars, including potential pitfalls and how to buy a used car at an auction. We also tested two cars on opposite ends of the acceleration spectrum: the Renaull Gordini R-8 (0-60 mph in 13.9 seconds) and the Dodge Coronet 500 (0-60 mph in 7.7 seconds).





30

JUNE 1985 PRICE: \$2.00

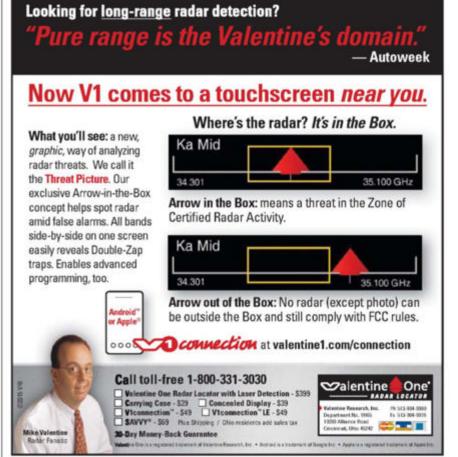
The Chevrolet Camaro GTZ concept was pretty shocking in '85, but it was an accurate preview of the styling direction GM took with its next-gen ponycar, right down to the Firebird-style spoiler. 10

JUNE 2005 PRICE: \$3.99

Ford GT versus Ferrari F430. Chevrolet Corvette Z51 versus Maserati Spyder. Ford Mustang GT versus Nissan 350Z. If this issue didn't have enough performance for you, you must not have read the Maserati MC12 article.







They Say

MAN WITH A PLAN Under Jean-Marc Gales, sales are up, costs are down, and cars are launching on time.



Jean-Marc Gales CEO, LOTUS

Lotus is steadily becoming the carmaker we all once thought it was. According to CEO Jean-Marc Gales, it's once again all about simple, ultra-lightweight cars with transcendent handling.

Gales was hired by Lotus' Malaysian owner, DRB-HICOM, after the ouster of Dany Bahar, the CEO who wanted to shift Lotus toward a Porsche-like range. Gales is a lifelong Lotus fan and a self-confessed übergearhead. He trained as an engineer, but he's had senior posts in other disciplines for a number of carmakers, including as global head of sales for Mercedes-Benz.

He draws two solid lines in the sand very early in our interview. First: "Any car we launch in the next two years will be lighter and faster than its predecessor." This applies to new versions of the Elise, Exige, and Evora. And second: "I want to sell 3,000 cars a year." What will these revised cars be like? "Very advanced but having nothing superfluous," he says. "They might lose some of the ride comfort they have now but will gain massively on handling. I sleep very well at night knowing the engineers who sign off the handling." There will be obvious salesboosting variants, including an Evora convertible and additional track-biased derivatives.

Should Lotus build its own engine? "There is absolutely no need. Why spend hundreds of millions of dollars on that? I can buy one and tune and calibrate it."

What about the aluminum structure under all Lotus cars? "The Evora tub meets regulations until 2020, and we will likely stay with aluminum beyond that. It's similar weight and strength to carbon fiber but one-third of the cost."

Lotus has lost money every year for the past two decades. Bahar stated emphatically that Lotus could never survive on its ultralightweight range, simply because the global market was insufficient for the company to break even. Gales says the exact opposite, that the market for lightweight cars is just fine provided you run the company well.

"I was surprised by the lack of process when I came here," Gales says.

Already sales are up. Partly that's because there are now new dealers in obvious places—Paris, Berlin, Monaco, Abu Dhabi—where Lotus was bewilderingly absent before.



Any car we launch in the next two years will be lighter and faster than its predecessor."

Other housekeeping measures have been taken. "We didn't even have a customer database." Lotus' global sales went up by more than 50 percent to 1,565 in April through December of 2014 (202 of which were in the U.S.) compared with the same period a year before. "And we will increase revenue because [on] these higher-performing cars the [transaction] prices will go up." Gales has also cut costs. Many production jobs have been eliminated, and total head count has dropped from 1,215 to 930 even though output has risen.

Gales has many measures in mind to simplify production. A new "lightweight laboratory" in the engineering center contains every part from each of the company's models. Nearly every Lotus employee has been through the lab, looked at every part, and made suggestions as to how it can be made lighter, simpler, cheaper, or better. The results have been spectacular. The Evora 400 will take 20 percent fewer hours to build and cost 10 percent less in its bill of materials, and it will be lighter and higher in quality.

"We will launch on time, too," he says. "The Elise S Cup is the first Lotus ever that isn't late. [The Evora 400] is also finished already. Early! This never happens here. Lotus didn't even have a program management team before. Can you believe it?"

Gales arrived at Lotus HQ in May 2014 when it was almost mortally wounded. The company had lost \$260 million in fiscal year 2013. The Malaysian management moved in a year later and cut the loss to \$110 million. Gales says by the end of fiscal year 2015 the company will break even.

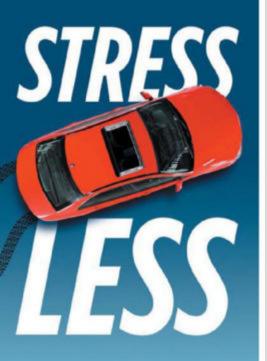
Much of this loss was due to investment in the failed V-8 Esprit supercar. In fiscal year 2013 R&D spending was greater than total revenue. Was there anything salvageable from that project? "Nothing," he shrugs. He says the much-vaunted V-8 had never properly run. "Don't invest £200 million (\$305 million) in a new car when you haven't exploited the current one." **Paul Horrell**



*NPD Group 12ME Nov Retail Unit Sales, AAIM 2003 to 2010; RTS 2011-2012 Manufacturer of vehicle shown has not endorsed this product. Ashland copyright 2015







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Your Say....

READERS' THOUGHTS ON PAST ISSUES

Counterpoint

I am so disappointed and willing to bet I am not alone. The big buildup, many months of anticipation for the Z06 to arrive. The glorious road tests by every car publication claiming it to be the best 'Vette ever, culminating in your closing comment to the competition to "bring it on" ("On Notice," February 2015). Wow. Then the March issue arrives containing the GT3 with another quote: "the sharpest, most precise, most buttoned-down 911 in history" ("Brothers in Arms"). Woo-hoo, time for the long-awaited Head to Head. Porsche versus Chevy, this is it. You send the lot boy out to get the car. He returns with a Camaro Z/28? C'mon man!

If possible, choose from the following responses: A) Porsche said no way, B) all of the above.

LEROY JOHNSONMenomonee Falls, Wisconsin

We'll go with C. The Z06 wasn't available at the time we conducted the test. May we direct your attention to our April 2015 issue, which features a bright yellow Corvette Z06 with a smiling Randy Pobst behind the wheel.—Ed.

Slush Special

In the March 2015 issue with commentary about the Chevrolet SS having a new manual transmission available ("Incognito Mode"), you again use a negative reference (slushbox) to automatic transmissions. From what I remember, the derogatory term "slushbox" was initially attached to GM's Powerglide and Dynaflow two-speed automatic transmissions of the '50s and '60s. Those transmissions didn't really shift gears; they slowly slid or "slushed" their way from first to second gear. They were casual-shifting transmissions designed for the leisurely driving conditions that matched the boat-like ride expected during that period. They were also a bulletproof design and so durable that many were modified a bit and ended up being the most popular choice for drag racing. Seems pretty counterintuitive that the "slowest" transmission at the time was often utilized by the quickest/fastest sport on Earth.

And here we are, 50 years later, continuing to shag on non-manual shifting. It would seem to me that the manual transmission is the modern-day slushbox. Most current performance automatics, from Porsche's PDK to Chevy's 8L90, can perform any combination of shifts quicker and do so intuitively for the conditions/situation. The driver may not be as involved with the powertrain, but they also concentrate more on the driving, track

LETTER OF THE MONTH

Confident Trend

In reading the letters to the editor in which readers comment on your choices of best whatever in whatever category, I've noticed a trend. In keeping with that trend, I'd like to let you know that I agree that the Subaru Forester is the best SUV, as evidenced by the fact that I own one. Also, the very best pickup truck is a 2008 Toyota Tacoma. Why? Because I have one. Finally, the best sports car, American or foreign, is a 2004 Corvette. Yup, I own one of those, too. Feel free to contact me if you're curious about which bicycles are best.

SAMUEL DERR Fremont, Ohio

Actually, we're looking for opinions on washers and dryers.—Ed.

GET YOUR HANDS DIRTY

Samuel, we appreciate you wading into the world of readers comments and cracking the code of their Self Centered Analysis Bias (SCAB). To help protect you we're sending you the Original gloves from Mechanix Wear. These babies retail for \$28 and make any hand ready to take on the slipperiest of subjects or engines. Learn more at mechanix.com.



positioning, and braking into and throttling out of corners, with a higher safety margin for us non-professionals.

You indicate that the SS manual shaves a tenth off the automatic's track time. We all know a tenth really indicates little or no testing difference when factoring in all possible variables: track, driver, ambient conditions, etc. Hell, a tenth of a second could depend on whether or not the driver got lucky the night before.

All this long-windedness is trying to say is when are we going to accept the fact people using manuals have become the true modern-day slushboxes?

LLOYD ANDERSON Henderson, Nevada

The tenth of a second saved alludes to the acceleration times from the test track, not a road course (the auto SS is 0.1 second behind in the 0-60 run and the quarter mile). The manual transmission will have to be truly dead and gone before slushbox exits the lexicon.—Ed.

6.15 TREND

FUTURE FEATURE OF THE MONTH?
"Power Villain List"

Comic Relief

Regarding your 2015 Power List (March 2015) I understand and agree with your inclusion of Jerry Seinfeld. But why was Jay Leno not also on this list? You speak of those "inspiring people and furthering car culture." I consider myself fortunate to have met him and visited his outstanding collection of cars, which he drives regularly and maintains with the support of a talented crew. This guy has to be one of the most devoted, knowledgeable, lifelong car enthusiasts around, spending time on the public platform promoting car culture with the gamut of car mavens, heads of industry, and tinkerers. Jerry Seinfeld's Web show always has a nice car added to the sojourn with fellow comedians. But Jay's show, "Jay Leno's Garage," focuses on the car, the engine, the history, etc. His episodes are all about the car and are totally devoid of the juvenile arguments, faux deadlines, and other fake and distracting dramas that permeate a number of cable television car repair/restoration shows. Perhaps you have included Jay on the list in previous years. Hope he is included in future lists.

READERS ON LOCATION

SPRING FLING Roughly 12 degrees west of the international date line, one of our subscribers takes a springtime hiking/camping trip. Derek Sweinhart on his New Zealand excursion: "A rare sunny day at the notoriously rainy Milford Sound, and what do I do? Pull out the Motor Trend." Smart move because the book won't get wet.

BART STRINGHAM Bethesda, Maryland

When we considered Seinfeld's influence on pop culture, we felt he reached an untapped audience and could create more new interest in cars. Leno remains a heavyweight in the car world, but Seinfeld's ability to appeal to a new, possibly broader public got him on the list.—Ed.

For the Record

After receiving my March 2015 issue of *Motor Trend* and reading on page 82 that [the Renegade] is "the first Jeep built outside of North America" ("Size Matters"), you got me thinking. Being a Kaiser buff in my youth, I remember that Kaiser shipped production

to Argentina. After I used Google to search "Industrias Kaiser Argentina," I saw a Jeep station wagon and read that the first Jeep rolled off the line on April 1956. Someone is in error. I think it is you guys.

FRANK KRIDER North Wales, Pennsylvania

Unfortunately, we omitted the crucial detail that the Renegade is the first Jeep built outside of North America for U.S. customers.—Ed.

I noted in your long-term updates ("Garage," March 2015) you have Real MPG fuel economy for the 2014 Mazda3 S Grand Touring as 21.9 mpg combined. Is this true, or is it a typo and actually 29.1 mpg? I have a 2015 '3 i with the 2.0-liter engine that has recorded an average of 30.5 mpg over the past four months with about 65 percent city driving and 35 percent highway. I would have expected 29.1 for the 2.5-liter motor, but 21.9? That's even lower than the Cadillac CTS Vsport!

DINESH BHUSHAN Ann Arbor, Michigan

Our Mazda3's Real MPG is indeed 29.1.—Ed.











JONNY Let's start with this. You have to be part caveman—not that there's

anything wrong with that—to prefer the Hellcat over the Tesla.

CHRISTIAN Cavemen discovered fire and cooking meat. That's more than the granola-chewing hippies that drive a Model S can say. **JONNY** Granola-chewing hippies don't buy \$130K hyper sedans. Their parents do.

CHRISTIAN The Charger Hellcat has *so* much going for it. Let's start with raw curb appeal. The Hellcat's dripping with it. And I know for a fact that

I'm not the only one who feels that way.

JONNY I bet policemen like it just fine. CHRISTIAN In fact, they do! Just this morning on my way in, a cop pulled up next to me at a light. He rolled down the window and hollered over: "Hey man, rev it! It's OK! I'm a cop!" So I obliged. Then he

said, "When the light turns green, open her up—I'll hold traffic back!" So naturally I did. After a bit of a smoke show and a run up to 60 mph, he flew on by, flashed his lights in approval and gave me a thumbs up. That would have never happened in the Tesla.

JONNY Exactly right. The Tesla is stealth. No one expects a car that can go solo in the car pool lane because of its world-class efficiency to hit 60 mph in 3.2 seconds. Let me state that again: 3.2 seconds! Which, by the way, is half a second quicker than the Charger Hellcat's 3.7-second limp to 60 mph.



christian Har har. Actually, I'd argue the Charger is pretty stealthy, too. I mean, aside from the big and badass (ahem) hood scoop and the SRT and Hellcat badges, it looks like any ol' Charger that you can rent from

Enterprise. Besides, once you're on the move, the Hellcat will smoke the Tesla. It'll accelerate from 45-65 mph in 1.5 seconds. It took longer for you to read that than it took the Hellcat to pass a car on the freeway. The Tesla needs an extra 0.2 second to do the same thing. That's practically an eternity! And let's not even get started on top speed.

JONNY Oh yeah, top speed, the world's most meaningless metric. Sure, in fantasy land and the comments section the Dodge can hit 204 mph. In the real world that will never happen.

There's no track, let alone road, straight, long, and clear enough. Speaking of the real world, this here double-motored electric car runs the quarter mile in 11.7 seconds. It takes your 707-horsepower brute 11.8 seconds to do the same. That's slower, in case you're wondering.

CHRISTIAN Actually that's not slower—that's less quick. The P85D traps at 113.7 mph. The Hellcat's moving at 124.3 mph. You and I both know the Hellcat would smoke the Tesla at any distance longer than a quarter mile.

JONNY Smoke being the operative word when it comes to the Hellcat. See, the Model S P85D is all about efficiency, traction plus torque, 687 lb-ft of it. The Dodge might make 650 lb-ft of torque, but it can't put that twist down. The under-tired Hellcat just sits and spins,

making wasteful noise and smoke. You can't even launch the thing hard in first gear.

CHRISTIAN Yeah, well, true—but I prefer to think of smoke and noise as a nice added feature. It's comforting to know that a smoke screen is just a tap of the throttle away, even in the 505-hp Eco mode. I disagree that the Model S P85D is all about efficiency. If the Tesla really were all about efficiency, it wouldn't have less

range than every other 85 kW-hr Tesla that's come before it. It also wouldn't have eaten into said range at such a frightening rate during our drive loops. How much range did you go through over 40 miles again the other day?

JONNY I don't want to talk about it. But the Tesla Superchargers sure





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DECISION: USA

seem to be getting better, huh?

CHRISTIAN Dude. You used

84 miles of range in 46 miles. That's terrible. You undid the hour and 15 minutes we spent at the Supercharger in about 30 minutes.

JONNY No comment.

CHRISTIAN My (and I say "my" because I'm never giving it back) Charger—the car you call inefficient—only used 34 miles of range according to the trip computer over the same distance at the same speed.

JONNY But how much money did it cost you to fill the Hellcat back up? The thing about Tesla's Superchargers is they are 100 percent free of charge. In fact, compared to other new cars on the road, the P85D will save you \$4,500 in gasoline bills over five years. Over the same time frame the Hellcat will set you back \$5,500.







PROJECT: BADASS The Badasses That Couldn't Make It

Although it took a brawl for Jonny and me to settle the American badass debate, we did agree that the Charger Hellcat and the Model S P85D are the most badass sedans in the world. That said, there were a handful of other high-power sedans from around the globe that we considered inviting along—not to mention some potential badasses waiting in the wings.

Badasses from Faraway Lands

America makes both the quickest and fastest (and thus most badass) sedans in the world, but a handful of high-po four-doors with foreign passports come close to matching our American badasses.

2015 Audi RS7 560 hp/516 lb-ft of torque, 0-60 mph in 3.2 seconds, 190 mph top speed 2015 BMW M5 575 hp/500 lb-ft of torque, 0-60 mph in 3.7 seconds, 190 mph top speed 2015 Jaguar XFR-S 550 hp/502 lb-ft of torque, 0-60 mph in 4.4 seconds*, 186 mph top speed 2015 Jaguar XJR 550 hp/502 lb-ft of torque, 0-60 mph in 3.8 seconds, 174 mph top speed 2015 Mercedes-AMG E63 S 577 hp/590 lb-ft of torque, 0-60 mph in 3.4 seconds, 186 mph top speed

2015 Porsche Panamera Turbo S

570 hp/590 lb-ft of torque, 0-60 mph in 3.6 seconds*, 192 mph top speed

Potential Badasses

None of those super sedans are quite as badass as the 707-hp Hellcat or 691-hp P85D, but a handful of potential badasses may have what it takes to tackle the Dodge and Tesla.

2016 Cadillac CTS-V 640 hp/630 lb-ft of torque, 0-60 mph in 3.7 seconds*, 200 mph top speed

2016 Lexus GS F 467 hp/389 lb-ft of torque, 0-60 mph in 4.3 seconds*, 170 mph top speed* 201? Infiniti Q50 Eau Rouge 560 hp/443 lb-ft of torque, 0-60 mph in 3.3 seconds*, 185 mph top speed* Christian Seabaugh

*Est.



THUMB POLL: TESLA: 94% | HELLCAT: 6%

Two simple steps.



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CHRISTIAN That'd be a great point if the Tesla wasn't \$64,000 more than the Charger Hellcat. It would take you more than 30 years of driving the Tesla—per the EPA—until your electric car finally earned back its price premium. As for how much it costs to fill the Hellcat back up—only about \$45 bucks. Fuel is cheap! Let it rain dinosaur juice!

JONNY That's the epitome of shortsighted thinking. Gasoline could cost \$5 a gallon tomorrow. Or \$7. Buy a Tesla, and who cares what oil costs? You'll never have to think about gasoline again. Which is the kind of freedom some people will happily pay double for.

CHRISTIAN Freedom. Funny. According to the EPA, I can go anywhere within 296 miles, fill up again in a couple minutes, and continue on

my way. You're limited to a good deal less than the indicated 253 miles in the P85D—and you'd better hope you can find an empty Supercharger waiting when you get there because otherwise you're stuck waiting to recharge.

JONNY That's actually a pretty good point. The electric infrastructure—specifically Tesla's network of Superchargers and long-rumored battery swap stations—just is not there yet. But as every single Tesla owner will tell you, it's quite rare that you hop in a car and just start driving. More often you plan out long trips, and figuring out where you're going to charge your Tesla becomes as second-nature as figuring out where you're going to eat lunch. The Model S' range is a non-issue 364 days a year.



INSTAGRAM: TESLA: 93% | HELLCAT: 7%



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CHRISTIAN True. However, we Americans are all about doing things just because we can. Case(s) in point: the moon shot, the Super Bowl, deep-fried Snickers, deep-fried butter, and a 707-horsepower V-8 in a family sedan. Some people actually value the freedom of just getting in a car and going without having to think about why. I can't even begin to count how many times I've done that. In college I once drove 3 hours for free pancakes instead of going to Spanish. I likely couldn't have, and more importantly wouldn't have, done that in the Tesla. And although there's no getting around the fact that the Charger's fuel economy is suboptimal (13/22/16 mpg city/ highway/combined EPA), you do really get a lot for what you pay.

JONNY But look at what you get when you pull the trigger on this Tesla: air suspension, autopilot, geo-fencing—that's where the car behaves a certain way depending on where you are. For instance, you need to raise the car up to clear the supermarket driveway. The Tesla knows where you are and does it automatically every time you're near the supermarket. Besides that, the car is continuously updated via the cloud. This car's running version 6.1 of Tesla's software. Rumor has it that a future update will rejigger the flux capacitor (or whatever) and will improve on the P85D's already world-best sedan acceleration times. Did I mention Insane mode? The P85D actually has an acceleration mode called Insane. I'd love to shake the hand of the lawyer that thumbs-upped that one.



CHRISTIAN Granted, the Tesla's tech is cool. Autopilot is awesome when it's working properly, and the P85D's computing ability is amazing when you look at where cars were only five years ago. But beneath the tech and the

Easter eggs (like James Bond mode, where the screen's Tesla image is replaced by 007's Lotus submarine), what you really have is a very fancy computer. You're just along for the ride, and I get the sense that the Tesla would be happier if it were doing the driving instead of you. I've experienced Insane mode. Yes, it is pull-yourface-back guick, but what about the rest of





ROUND ONE Tesla claims upcoming

the driving experience? The Charger Hellcat is Insane mode

JONNY True. The Tesla is freaky quick. But man, the Hellcat's almost as quick. And the big blue Dodge makes some of the best noises on planet Earth while creating clouds of gorgeous, juvenile smoke. Can I be honest with you?

CHRISTIAN That's the normal way liars preface their stories, but go right on ahead.

JONNY Look, I was one of the 11 judges that unanimously voted the Model S our 2013 Car of the Year, and that was before the monster power P85D showed up. I never thought we'd see another American sedan that's a bigger badass than the Tesla, but I think this is it.

CHRISTIAN Benedict Arnold!

JONNY Don't get me wrong, I love the P85D, but it comes down to this: The Tesla is like the absolute greatest vegetarian meal on the planet, cooked for you by Thomas Keller himself. Not only does it taste tremendous, but it's also great for you. The Charger Hellcat, on the other hand, is a great big steak. With a martini. And creamed spinach. And french fries. And another martini. And a cigar. And cheesecake. Dropping the pretense of this back and forth, the Dodge is the one I want to eat.

CHRISTIAN That settles it then—the Dodge Charger SRT Hellcat is the ultimate American

JONNY Call it a 51 to 49 victory, but yes. Mark this one down as a win for Dodge.



2015 Dodge Charger SRT Hellcat Front-engine, RWD Supercharged 90-deg V-8, iron 376.2 cu in/6,166cc 707 hp @ 6,000 rpm* 650 lb-ft @ 4,800 rpm* 8-speed automatic Control arms, coil springs, adj shocks, anti-roll bar; multilink, coil springs, adj shocks, anti-roll bar 15.4-in vented, slotted disc; 13.8-in vented, slotted disc, ABS 9.5 x 20.0-in, forged aluminum 275/40R20 106Y Pirelli P Zero 200.8 x 75.0 x 58.3 in

59.5/57.9 in 16.5 cu ft 1.7 sec 2.4 3.0 37 4.6 5.6 6.6 7.9 1.5 11.8 sec @ 124.3 mph 104 ft 0.94 g (avg)

24.5 sec @ 0.91 g (avg)
1,250 rpm
\$64,990
\$69,670
Yes/yes
Dual front, front side, f/r curtain, driver knee
3 yrs/36,000 miles
5 yrs/100,000 miles
5 yrs/100,000 miles
18.5 gal
13/22/16 mpg
259/153 kW-hrs/100 miles
1.22 lb/mile
15.1/21.9/17.6 mpg
Unleaded premium
and the



POWERTRAIN/CHASSIS

DRIVETRAIN LAYOUT **ENGINE TYPE** VALVETRAIN DISPL<u>acement</u> COMPRESSION RATIO

block/alum heads OHV, 2 valves/cyl

95.1

6.000 rpm

2.62:1/1.76:1

6.5 lb/hp

14.4:1

120.4 in

38.5 ft

4 562 lb

57/43%

38.6/36.6 in

41.8/40.1 in

64.0/63.7 in

3.0

BATTERY TYPE POWER (SAE NET)

TORQUE (SAE NET)

REDLINE **WEIGHT TO POWER TRANSMISSION**

AXLE/FINAL-DRIVE RATIO SUSPENSION, FRONT; REAR

STEERING RATIO TURNS LOCK-TO-LOCK BRAKES, F; R WHEELS

TIRES, F; R

DIMENSIONS WHEELBASE TRACK, F/R

LENGTH X WIDTH X HEIGHT **TURNING CIRCLE CURB WEIGHT** WEIGHT DIST, F/R SEATING CAPACITY HEADROOM. F/R LEGROOM. F/R SHOULDER ROOM, F/R

CARGO VOLUME*

0-30

0-40

0-50

TEST DATA **ACCELERATION TO MPH**

0-60 0-70 0-80 0-90 0-100 PASSING, 45-65 MPH QUARTER MILE BRAKING, 60-0 MPH LATERAL ACCELERATION MT FIGURE EIGHT TOP-GEAR REVS @ 60 MPH

CONSUMER INFO BASE PRICE PRICE AS TESTED STABILITY/TRACTION CONTROL

AIRBAGS BASIC WARRANTY **POWERTRAIN WARRANTY ROADSIDE ASSISTANCE**

FUEL CAPACITY EPA CITY/HWY/COMB ECON **ENERGY CONS, CITY/HWY CO2 EMISSIONS, COMB** REAL MPG, CITY/HWY/COMB

RECOMMENDED FUEL

2015 Tesla Model S P85D

Front- and rear-motor, AWD AC induction electric motor

85 kW-hr lithium-ion 221 (front)/470 (rear)/691 (comb) hp 244 (front)/443 (rear)/687

13.0:1

7.2 lb/hp 1-speed automatic 9.73:1/9.73:1

(comb) lb-ft

Control arms, air springs, anti-roll bar; multilink, air springs, anti-roll bar

23 14.0-in vented disc; 14.4-in vented disc. ABS

8.5 x 21.0-in, cast aluminum 245/35R21 96Y; 265/35R21 101Y Michelin Pilot Sport PS2

116.5 in 65.4/66.9 in 196.0 x 77.3 x 56.5 in 37.0 ft 4 944 lb 50/50% 38.8/35.3 in 42 7/35 4 in 57.7/55.0 in 2.5 (fr), 26.3 (rr) cu ft

1.1 sec 1.7 2.3 32 4.2 5.4 6.9 8.6 1.7 11.7 sec @ 113.7 mph 104 ft 0.90 g (avg) 25.2 sec @ 0.79 g (avg) 7,300 (fr); 7,200 (rr) rpm

\$105,670 \$132,820 Yes/yes Dual front, front side, f/r curtain, front knee 4 yrs/50,000 miles 4 yrs/50,000 miles 4 yrs/50,000 miles 89/98/93 mpg-e 38/34 kW-hrs/100 miles (gas equiv) 0.00 lb/mile (at vehicle)

220-volt electricity







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Intercontinental concept showcases lincoln's new face, engine, and commitment to china

Words Ed Loh

The iconic name is back, the split wing grille is gone, and to answer your first question: No, it's almost certainly not rear-wheel drive.

Lincoln's official response goes something like this: "This is a concept. We're not talking platform architecture at this stage." The automaker is happy to confirm that a new turbocharged, 3.0-liter EcoBoost V-6, exclusive to Lincoln, will power the production Continental when it arrives in 2016.

But that's just a bit of misdirection when confronted with the return of such a historic nameplate on a concept so dripping with potential. If you were the Lincoln designer tasked with creating the car that would again wear the Continental name, how far would you take it?

If the design brief even hinted at rearwheel drive, you would leave no doubt. You'd send the windshield back and draw It is in that space that we find the answer. While the dash-to-axle ratio of the concept is just long enough to suggest room for that 3.0-liter EcoBoost to be mounted longitudinally, the intentional understatement is clear: The production Continental will be front- or all-wheel drive.

That production car-in fact all Lincolns going forward-will also bear a version of this new face. The mug has international cues and intent; the upright posture and chrome ring around deeply set mesh recall Jaguar, but the plinth, as the Lincoln design team calls it, that supports the star badge recalls Kia's tiger maw-although half as toothy. "This new face gives confidence.

CHROME-DIPPED A swath of chrome runs around at rocker-panel height, making it look like the body was dipped in chrome. Details like quad exhaust tips, 21-inch wheels, and the slick winglet door handles help break up heaviness in the sides.







It puts the face of Lincoln where it needs to be for future expansion," says David Woodhouse, Lincoln's design director.

Where the Lincoln most needs to expand is China, a country where large, chauffeur-driven luxury sedans are king. "The proportion is really essential to what we do," says Woodhouse. "The way it sits and is settled in the back end gives it the big-car, luxury feel."

It also gives it the look of a certain British luxury carmaker that also has a Continental in its lineup, which is no bad thing. But the lighting sequence is pure American drama. Approach the car with smart key in hand, and the Lincoln star in the grille fades on, followed by the LED tubes in the headlamps and foglamps, and then the five "ice cubes," which are also shaped like miniature Lincoln stars, in each headlamp. The full-width rear taillamps, another Lincoln signature, have a similar fade-on sequence, which, like the pulsing ignition button, are meant to give life and warmth to the concept.

Large swaths of chrome run around the car at rocker level; Woodhouse says this brightwork accentuates the horizontal and breaks up the volume of the sides, which you may notice are unmarred by door handles. The concept lives up to the Continental name. And that name is huge in China.

Their replacements are chromed winglets sprouting from the beltline. Lincoln calls them E-latches, and they work via a push button under each upturned wing that pops the door open. Rear ingress is further facilitated by door hinges that open to nearly 90 degrees. Yes, suicide doors were evaluated, but the Lincoln team had other plans. "We have a long-travel hinge, and what you end up with is a very large ingress opening that, quite frankly, is superior to the suicide door in terms of ingress," says Woodhouse.

Says Mike Celentino, Lincoln's chief program engineer: "We put a lot of emphasis on a very large opening for this back seat, not only in the U.S. but for our China market. It's really important that we have a really spacious back seat."

Woodhouse and team also focused on creating a lavishly appointed, executive-jetinspired cabin. Push a few buttons, and the front passenger seat slides forward as the rear seatback reclines and a lower leg support rises up. Push a few more, and a chromed case containing a small touchscreen slides out of the center console. Just behind the left elbow, there's a champagne refrigerator and a cubby for two thick-stemmed, custom flutes. Two leather-bound, zippered compartments on the front seatbacks pop off lugs and hidden magnetic clasps to become slim attaché cases.

Front seat occupants are spoiled with seats that can be heated, cooled, and adjusted 30 ways, thanks to 11 air bladders strategically placed in the seat cushion and all the way up to shoulder level. Winged sections suspended by elastomeric fingers that cradle and caress sprout from the seatback and cushion. A cutline a third of the way into the seat cushion allows air bladders to independently support the right and left thighs. Look up, and there is an electrochromic sunroof similar in operation to the window shades on Boeing 787 Dreamliners.

The sunroof, attaché cases, barware, and touchscreen are for show, but the spiral-drilled mesh speaker covers are not. They are part of the 19-speaker Revel Ultima audio system, installed as an homage to the exclusive 10-year deal between Lincoln and Harman, the maker of Revel.

Despite all the noise and chrome, Woodhouse and Lincoln's president, Kumar Galhotra, hope you understand why the Continental name is back and whom it targets.

"Continental was derived from intercontinental style. It wasn't purely American. It was a global feeling," says Woodhouse.

"It's such an iconic name," Galhotra says, "but it is a very, very modern car. The emphasis overall for this vehicle is quiet luxury. That name is so well-associated with the best of Lincoln. The next logical step for us was to create this flagship sedan that offers the best of Lincoln."

Galhotra: "It lives up to the Continental name. And that name is huge in China"





Tony Kanaan PC Carbon Chronograph Series No. 1105.5: 44mm asymmetrical black carbon reinforced polycarbonate case and case back, black PVD crown and pushers, tempered scratch resistant mineral crystal, black silicone strap with black signature buckle, created in Tony Kanaan's signature colors, water resistant to 200 meters, and Luminox self-powered illumination. Swiss Made.

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IT'S TIME TO STOP MOURNING THE 6.2'S DEMISE

The recent death of AMG's legendary, big-lunged, free-breathing 6.2-liter V-8 has inspired its own "black series" of obituaries. Road tests of the last Edition 507 and Black Series models praised that M156 engine's linear power, eagerness to rev, and thundering bellow, implying that its smaller-displacement successor stifled by turbos

might not share such virtues. Well it's time to doff those widow's weeds, lighten up, and regard this new Mercedes-AMG C63 as the rainbow in Genesis—a sign of the horsepower gods' covenant that no flood of CO2 regs, CAFE standards, or guzzler taxes shall ever smite mankind's quest for linear torque delivery, ever-improving lap times, and soul-stirring sounds.





FIRST DRIVE

This new direct-injected, 4.0-liter, "hotvee" twin-turbo V-8, code numbered M177, is a wet-sump riff on the M178 in the new Mercedes-AMG GT. Like the M156, it was designed from scratch in Affalterbach, where each one will be assembled and autographed by a single technician. The smaller turbo engine weighs about what the big M156 did. Another tenuous hook to that headline: The M177 loosely shares the Rainbow Warrior Greenpeace ship's mission of radical environmentalism, in that it wields radical power while greatly reducing CO2 emissions. AMG claims a 32 percent fuel-consumption drop makes this the world's most efficient performance V-8.

Meanwhile, 0-60-mph acceleration improves by a tenth thanks to a 4 percent power bump to 469 hp at 5,500 rpm and 479 lb-ft of torque from 1,750-4,500 rpm in the base C63. An extra 1.4 psi of boost (17.4 total) in S models makes for 503 hp and 516 lb-ft. Alas, the redline drops from 7,200 to 7,000 rpm.

"Exhaustive" efforts expended to usher stirring sounds past the turbos result in a threevalve system with no artificial electronic enhancement. One connects the left and right pipes near the engine. It opens in Comfort mode to send a soothing V-8 burble down both pipes or closes to send a CLA45-like snarl down each pipe. Two more valves open to short-circuit the rearmost mufflers, and a squirt of extra fuel produces lovely crackles and pops on overrun. Oh, and it replicates the M156's dramatic growl upon startup.

That thrust is routed through AMG's Speedshift MCT seven-speed automatic to the rear wheels via a standard limited-slip diff that gets electronic control in S models. The adjustable suspension is unique to AMG, with three levels of damping stiffness





2016 Mercedes-Benz C450 AMG 4Matic

IN THE COMPACT SPORTS sedan wars, AMG has offered generals (C63 variants) and foot soldiers (appearance/sport packages). Folks interested in captain- or major-grade performance went home with Audi S4s or BMW 335i M Sports—until now. Enter the Mercedes-Benz C450 AMG 4Matic. Similar models in other categories will all write "AMG 4Matic" after the model number, offering pricing and standard AWD performance that

AMG intends to dominate these midtier market niches, so the C450 gets a 362-hp/384-lb-ft higher-boost version of the twin-turbo, 3.0-liter V-6 that has been serving the C400 range (discontinued for 2016). By comparison, the S4 musters just 333/325, and the 335i is (coyly) rated 300/300. The standard 7G-Tronic torque-converter automatic is programmed for crisper, quicker shifts in the Sport+ setting of the AMG Dynamic Select

are more accessible to mainstream buyers.

program, and the AWD and ESP systems are likewise AMGified with a permanent front/rear torque split of 33/67 percent.

Suspension fettling revises geometry and bushings and adds three-position electronic damping and variable electric steeringassist systems like those used on the C63. Brakes are also upsized to 14.2-inch front and 12.6-inch rear vented rotors. Unique fascias, wheels, and trim bridge the mild-to-wild gap between the C300 and C63 in terms of aggression, and the interior gets red stitching galore, plus aluminum and piano-black trim.

The C63 feels fantastic on a wide, controlled track, but the C450's noticeably lighter, nimbler nose lends a sure-footedness and agility that the C63 lacks on narrow, winding public roads. The exhaust pops and crackles like the C63's, just in a higher V-6 register, and there's a bit of that "more fun to drive a slow car fast" thing at work. With pricing expected to just undercut the S4's (\$54K to start), you'll pay a 37 percent premium over the C300 for 50 percent more horsepower and 41 percent more torque. Sounds like reasonable bang for the buck.

2016 Mercedes-Benz C450 AMG 4Matic

8
BASE PRICE
VEHICLE LAYOUT
ENGINE
TRANSMISSION
CURB WEIGHT
WHEELBASE
LENGTH X WIDTH X H
0-60 MPH

EPA CITY/HWY/COMB Fuel econ

ON SALE IN U.S.

3.0L/362-hp/384-lb-ft twin-turbo DOHC 24-valve V-6 7-speed automatic 3,700 lb (mfr) 111.8 in 184.5 x 71.3 x 56.1 in 4.9 sec (mfr est) Not yet rated Fall 2015

\$54,000 (est)

Front-engine, AWD, 5-pass, 4-door sedan

Frank Markus





In the compact sports sedan wars, AMG has offered only generals and foot soldiers—until now.

IFLICT DIAN That diamond grille with the single crossbar and those flaring nostrils





selectable within the Dynamic Select modes. Tire and brake sizes ratchet up from base to S models, with staggered-width 18s on the base, 19s on the S, and carbon-ceramic rotors optional on the S. AMG says lap times should be a second quicker on a 1-minute-plus track.

AMG introduced the C63 S on the 2.9-mile F1 test track in Portimão, Portugal, recommending Dynamic Select Race mode, ESP Sport Handling mode, and the middle damping setting for greater compliance on bumpy apex curbs. I started out following five-time DTM champ Bernd Schneider, struggling to build confidence in the car's

ability to match his blistering pace, braking too early and too hard in the first corners then hurrying my return to full throttle only to break traction, resulting in further time-consuming (but smile-inducing) powerslides. When I began trusting the brakes, I noted that this electrified steering rack communicates what I need to know about front grip while the close-fitting seat transmits other chassis messages. New AMG head-up display graphics show crucial tach info while eyes stay locked on the brakingzone cones. A ride with Herr Schneider demonstrated the car's full potential. With all nannies off and two passengers onboard, he carried 20 or 30 mph more speed through every section with no perceptible wheelspin.

I left the track in a base C63 and was struck by how civilized the ride quality remains, even with stiffer springs. Tire noise borders on deafening, but the exhaust sounds just right. Smart money says the S will outsell the base, and indeed if I were faced with the choice, the roughly \$10,000 upcharge would **BASE PRICE RANGE** \$63.000-\$73.000 (est) Front-engine, RWD, 5-pass, 4-door sedan **VEHICLE LAYOUT ENGINE** 4.0L/469-503-hp/479-516-lb-ft twin-turbo DOHC 32-valve V-8 TRANSMISSION 7-speed automatic **CURB WEIGHT** 3,950 lb (mfr) WHEELBASE 111.8 in **LENGTH X WIDTH X HEIGHT** 187.2 x 72.4 x 56.1 in 0-60 MPH 3.9-4.0 sec (mfr est) EPA CITY/HWY/COMB Fuel Econ Not vet rated ON SALE IN U.S. Currently

probably seem worth it for the E-Diff, better brakes, 180-mph speed-limiter (155 is standard), Race mode programming, and minor interior and exterior styling spiffs.

Is it OK to mourn the M156 C63 AMG? Sure. That engine in that car made for big, hairy, loud, stupid fun. But trust me. A strong dose of smaller, blown, loud, stupid M177 fun (plus faster lap times and a lighter fuel bill) should dry those crocodile tears right up. ■





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60 MOTORTREND.COM / JUNE 2015

Gliding through Portimão's Samsung corner, former World Rally Champion Walter Röhrl is driving the dark silver Cayman GT4 very, very quickly, but by now I've spent enough time with the car to sense it's got some left in it. As we exit Turn 9, Röhrl glances in the mirror at the three GT4s tailing us. They're keeping up. His face, already stoic, tightens. His eyes narrow, and his body language is suddenly but obviously more serious.

It's on. Röhrl drives the GT4 for everything it's worth. Three corners later, he backs off a bit, looks over at me, and says dryly, "Sometimes you have to show them who is the chief."

It's there, at the razor's edge, where I finally appreciate just how good the GT4 is. Röhrl has left the traction and stability control on, and they never make themselves known. It's immediately clear to me the car wants to go



even faster, but we've reached the limit of what the best street tire can do.

On the next lap, I ask him if he would change anything aside from the tires if he were to enter the car in a race. He pauses a moment then answers firmly. "No."

The GT4's goodness starts at the corners. The front suspension and tires are straight from the 911 GT3. The rear suspension features a new knuckle and helper springs. All four corners get active dampers and ball joints for suspension mounts. The tires are Michelin Pilot Sport Cup 2s. They're assisted by a big, fixed rear wing, a small ducktail spoiler below it, and a big front splitter.

With more grip than power, it takes a concerted effort to upset the chassis in any way, and you won't find the limits of its grip on the street. Even bumps and holes can't shake it. When we nail a big, unseen, mid-corner dip with the left rear tire at high speed, I have no doubt that the tire left the ground, but the two were immediately put back into contact, and the chassis registered only the slightest shimmy.

On top of it all, the ride quality is shockingly good. Normal mode is tuned for the bumpy Nürburgring Nordschleife, and as a result the car rides very well on underfunded public roads. Unlike with some track-oriented cars, you could just as easily take this one on a road trip. Even with the dampers set to Sport, the ride is more than tolerable.

The key component tying it all together is the steering. The weighting and precision are exceptional, and the rack transmits the





important road feedback but filters out the useless stuff.

Taken to task, the GT4 returns beautifully neutral handling. Getting anything more than a mild push requires a serious mistake, and the same goes for oversteer. The car will rotate a few degrees with well-timed trailing throttle mid-corner or too much throttle at corner exit, but the rotation is slow and smooth and easily controlled.

The car also has more brakes than power. The 15-inch steel rotors at all corners (also lifted from the GT3) get clamped by six pistons in front and four in the rear. Brake pedal progression and feedback are excellent, allowing you to be extremely precise in your braking. There's also a superfluous carbonceramic brake package.

With such incredible braking and handling abilities, the GT4 becomes as much a teacher as an ally. In its responses to your inputs, the GT4 will show you exactly what you've done wrong in any given corner. If you listen, you'll know exactly what to do differently on the next lap. Turn in too early or carry too much speed? A mild push on the way out. If you do manage to get the car out of sorts, it's so forgiving that your confidence won't suffer. It's a post-graduate study in handling to a Miata's undergraduate education.

The downside is this: It's almost too good. On a public road, it takes suicidal speeds to really feel like you're challenging the car. On the track, you must identify the scary corners then grit your teeth and carry more speed through them. The GT4 won't make you feel like a hero until you push the bounds of your comfort zone.

Then there's the powertrain. The 911-derived, 385-hp, 3.8-liter, naturally aspirated flat-six revs freely and quickly to 7,800 rpm, though it truly comes to life at 4,000 rpm. Low-end torque is just above adequate for the caliber of the car, allowing you to go hard into the throttle at corner exit without worrying much about oversteer. Inside the car, there's a healthy dose of induction noise evocative of an old air-cooled 911. Outside, it sounds like a spec racing car with just enough muffler to meet legal requirements. The dirty truth, clichéd and ungrateful as it sounds, is that this improved chassis could take even more power.

The six-speed manual shifter has far less room for improvement. It's light and precise with just enough notchiness to let you know you're fully in gear. Throws are short, and the gates are closely spaced. The clutch is light but easy to feel out. It's simply amazing how quickly you can change gears. The only mark

against it is a somewhat weak reverse lockout that can occasionally be breached when attempting a fast 3-2 downshift. Porsche is looking into it. Should you care to use it, the automatic downshift engine rev-matching feature works perfectly.

It's immediately clear when driving the Cayman GT4 that this car was built by people who love to drive above all else. The car was designed not just to be faster but also fun and exciting and rewarding. At the same time, though, it doesn't give up its rewards easily. It not only forces you to be better but also teaches you how to do it. The more you drive it, the more you want to drive it. The harder you want to drive it. The faster you want to drive it. All because you know that it only gets better the harder you push it and yourself.



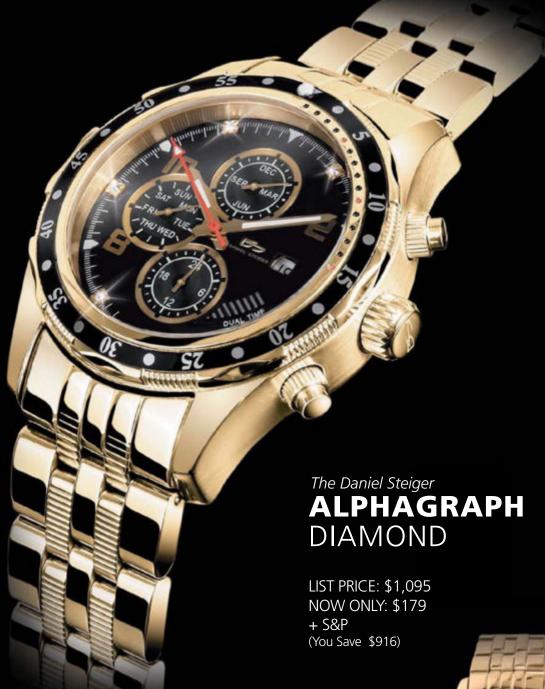


2016	Porsche	Cayman	GT4
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2010 Porsche Gayman G14		
BASE PRICE	\$85,595	
VEHICLE LAYOUT	Mid-engine, RWD, 2-pass, 2-door hatchback	
ENGINE	3.8L/385-hp/310-lb-ft DOHC 24-valve flat-6	
TRANSMISSION	6-speed manual	
CURB WEIGHT	2,950 lb (mfr)	
WHEELBASE	97.8 in	
LXWXH	174.7 x 71.5 x 49.8 in	
0-60 MPH	4.2 sec (mfr est)	
EPA CITY/HWY/ COMB FUEL ECON	Not yet rated	
ON SALE IN U.S.	Fall 2015	







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PUTTING "SPORT" BACKINTO SPORT/UTILITY



2015 Audi SQ5 VS. 2015 BMW X4 xDrive35i VS. 2015 Mercedes-Benz GLA45 AMG VS. 2015 Porsche Macan Turbo

Sport/utility vehicle. Is there a bigger misnomer than that? Sure, SUVs are vehicles, and they do usually have some sort of utilitarian function, but sport? Nuh-uh. Take a look at the most popular SUVs in the United States last year, led by the Honda CR-V, Ford Escape, and Toyota RAV4. I don't think any of you would argue with me if I said sportiness is the last reason anyone's buying these.

I suspect somewhere along the SUV development timeline someone—probably the same person who said a four-door could be labeled a coupe—forgot to tell the Germans that SUVs don't need to be sporty. And what a

wunderbar mistake that turned out to be.

The small SUVs atop the U.S. sales charts lack any pretense of sportiness, but these four compact-ish Germans ooze it. This Teutonic quartet represents the sportiest small crossovers Germany makes. From Ingolstadt comes the 354-hp 2015 Audi SQ5. Munich is home to the fastback-styled 2015 BMW X4 xDrive35i. Stuttgart has two entrants: the 355-hp 2015 Mercedes-Benz GLA45 AMG, which comes courtesy of Affalterbach, and the 400-hp 2015 Porsche Macan Turbo. Each contender features all-wheel drive and some form of forced induction.

Because these SUVs, unlike most, are built for spirited performance driving, we're judging them as such over a road loop that Jonny Lieberman dubbed the Sürfschleife. This route includes Los Angeles' famous Mulholland Drive, steep hills, tight switchbacks, and some city and highway motoring thrown in for good measure. We're primarily seeking to determine which German ute is the best driver of the bunch, but fuel economy, comfort, and value will play a role in our decision, as well.

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ON PAPER, things didn't look too good for the BMW X4 xDrive 35i. This so-called SAC (BMW insists on calling it a "sport activity coupe") has the lowest power and torque output, the slowest 0-60 mph and quarter-mile times, and the second-longest braking distance of the bunch. The X4's 3.0-liter, turbocharged I-6 makes just 300 ponies and 300 lb-ft of

twist. Despite the handicap—and thanks to a ZF-sourced eight-speed automatic and the second-lowest curb weight—the X4 wasn't that far behind the others at the track. Stomp on the gas, and the X4 will hustle to 60 in 5.2 seconds and complete the quarter mile in 13.9 seconds at 98.8 mph. Slam on the brakes from 60 mph, and the X4 will stop in 113 feet.

The X4's lackluster (for the group) figure-eight performance of 26.2 seconds at 0.71g average was reflected on the twistier sections of our road loops. "The X4 is immediately larger, taller, and heavier-feeling than the others," associate editor Rory Jurnecka noted. "Steering the X4 is like playing tug-of-war with the front tires; it really needs to be muscled around to get the most out of it." Associate editor Scott Evans agreed, likening the X4 to a big sport sedan on the canyon portions of the loop. "Body control is

impressive for the ungainliness of this car," he said. "I actually enjoyed driving it hard."

The rest of the package was hit-or-miss up in the canyons. The X4's straight-six was a genuine treat and the best part of the crossover. The engine sounds great and loves to sing all the way up to its 7,000 rpm redline.

Although it wasn't impressive on the ragged edge, we expected better of the BMW during the freeway and city portions of our drive loops. For the least sport-oriented SUV in the test, the BMW X4 was not surprisingly the least enjoyable. The BMW had the harshest ride and the loudest cabin of the group, thanks in large part to the noise generated by the rubber band-thin run-flat rubber on its 20-inch wheels. Add its lackluster canyon performance to its poor city and freeway manners, and it's no surprise Munich came up short among its German rivals.

The X4's straight-six was a genuine treat and the best part of the crossover.





DISAPPOINTING The BMW X4 xDrive35i features leather on the seats and door panels that is nice, but the Munich-born SUV's cabin is otherwise "cheap, stale, and frankly just old-looking," associate editor Rory Jurnecka said.







WINTER TIRES. Our 2015 Audi SQ5 was delivered to us with winter tires on a 73-degree February day. Although it obviously wasn't ideal, we were still expecting big things from the SQ5, especially because at heart it's basically a slightly lighter but much cheaper version of the Porsche Macan. Stuttgart uses turbochargers to boost its engines, but

Ingolstadt prefers the instant torque delivery of a supercharger—thus the SQ5 sports a supercharged, 3.0-liter V-6 good for 354 hp and 347 lb-ft of torque. Like the BMW's, it's mated to an eight-speed automatic transmission. If our SQ5 had been shod with summer rubber, it would've performed as our 2014 tester did: 4.8 seconds to 60 mph, 13.5 seconds for the quarter mile at 102.2 mph, a 104-foot stop from 60 mph, and an impressive 25.9-second figure-eight lap averaging 0.71 g. With snow tires its track performance was still surprisingly impressive. Thanks to the extra slip allowed by the softer winter rubber, the SQ5 hit 60 mph in 4.4 seconds and powered through the quarter mile in 13.1 seconds at 104.2 mph. The cold weather tires hurt the SQ5 in braking, 123 feet to stop from 60 mph, and on the figure eight, where it needed 26.5 seconds to complete the course,

averaging 0.72 g along the way.

The SQ5 quickly won the hearts and minds of our judges during the road loops. "I think the 'R' fell off!" Evans said, hinting at Audi's RS models, after his drive. "Put it in Dynamic, and it's unhinged. The throttle is hair-trigger. The engine is always at 4,000 to 6,000 rpm."

Unhinged is an apt descriptor. The SQ5's supercharged V-6 is slightly less powerful than the related Macan's twin-turbo V-6, but thanks to the surge of torque and the snow tires clawing for grip as you leap off the line, you wouldn't know it. The SQ5's unhinged personality is combined with a mean exhaust note (which, to be fair to the others, is piped into the cabin through the stereo), a decent automatic transmission, and a good ride. Jurnecka was a fan of the winter tires on the SQ5. "Winter tires should be standard on this thing!" he said. "Lots of fun to get the





AGING WELL The SQ5's interior is dated compared with the interiors found in Audi's latest, but the Audi still sports exceptional quality and an R8-inspired flat-bottom steering wheel. We do wish the seats had a bit more bolstering, though.





car moving around," though he noted some unpredictability in that regard.

Associate online editor Erick Ayapana also noted the difference. "A textbook example of the dramatic effects tires have on handling," he said. "This SQ5 with winters is not the SQ5 I remember driving last year." Maybe it's best those winter tires aren't standard.

So where does it fall apart for the SQ5? Although testing the SQ5 and its cold-weather tires on hot, dry roads wasn't ideal, its ranking reflects more on our experiences with summer tires than this winter-ready example. Rather, it's that steering feel is more Novocain than cocaine and the fact that the SQ5 is a little too unrefined for us. It's got loads of personality but not enough polish—inside the cabin, under the skin, or where the rubber meets the road—to compete with the contenders above it.







THE AUDI AND BMW fell into their respective places pretty easily, but picking a winner between the Porsche Macan Turbo and the Mercedes-Benz GLA45 AMG was far more difficult. Both are among the best-driving SUVs ever made. Neither makes any compromises for being an SUV, behaving like a sports car one moment and a family crossover the next. In the Porsche's case, it's an expensive sports car thanks to its \$84,850 sticker, which is considerably more than the rest of the competition. That price tag isn't without perks, though, such as a 3.6-liter

twin-turbo V-6 good for 400 hp and 406 lb-ft of torque paired with Porsche's marvelous PDK seven-speed twin-clutch automatic and a torque-vectoring all-wheel-drive system.

The Macan is the heaviest crossover of the quartet, but its track numbers don't show it. The Porsche's 4.2-second 0-60 mph time is the quickest of the bunch. Its quarter-mile performance of 12.9 seconds at 106.2 mph makes it the second quickest by a tenth of a second and second fastest by about 1 mph. It stops from 60 mph in 102 feet and can pull off 0.90g average on the skidpad. Although

"F'ing telepathic, man! Everything seems to work together so seamlessly!"





WONDER Where does that extra 20 grand go? Look no further than the interior. The Porsche Macan Turbo has by far and away the most luxurious cabin of the Teutonic quartet we tested.



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It makes no compromises. It's among the best-driving SUVs ever made.



all those instrumented test numbers are impressive, perhaps the most impressive is its figure-eight lap, where it finished in a two-way tie for first-place. Both the Macan and the GLA45 lapped the course in 25.0 seconds at 0.78g average.

The Macan's road manners speak even louder than its track numbers. "Fing telepathic, man!" I started my notes. "Everything from the engine and transmission to the suspension and steering seems to work together so seamlessly." As is the case with most modern Porsches, getting around a corner quickly is as simple as tapping the Sport Plus button and hanging on for dear life as the Macan does all the hard work for you. The one big drawback for the Macan

is its decidedly un-Porsche-like steering feel. Although the steering rack itself is quick, feedback is numb and, well, Audilike. "Clinical and sterile," Ayapana called it. Evans said it was "very competent and efficient at driving fast but rather emotionless about it—virtuosity rather than passion, scales rather than solos."



With performance, comfort, and features so evenly matched with our top finisher, the Macan falls short in value. "Nowhere is the 'you get what you pay for' adage so evident as in the Porsche Macan Turbo," Jurnecka noted. "It looks expensive, feels expensive, sounds expensive, drives expensive, and even smells expensive. And guess what: It's expensive! To the tune of some \$20,000 more than the second-cheapest vehicle in the group." One could argue that options such as the \$3,300 21-inch wheels could be skipped, but there's no getting around the fact that the Macan is pricey. Even a Macan S comparably equipped to its competitors is still 10 grand more expensive-and slower to boot.





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AS ENTHUSIASTS, we're quick to pigeonhole a vehicle that doesn't fit cleanly into any of our black-and-white categories. Take the Subaru XV Crosstrek. Subaru calls it an SUV. Enthusiasts call it a tall hatchback. The Mercedes-Benz GLA45 AMG is another of those hard-to-pin-down vehicles. Evans' first line in his notes: "It's not an SUV; it's a hot hatch with a lift kit." Call the GLA45 AMG what you will. It's not only the best-driving crossover here, but it's also among the best-handling vehicles on the market, bar none.

stats. The only four-cylinder vehicle of the bunch, the GLA45's over-boosted 2.0-liter, turbocharged I-4 and its 355 hp and 332 lb-ft of torque mated to a seven-speed dual-clutch automatic rockets to 60 mph from a stand-still in 4.3 seconds and finishes the quarter mile in a comparison-best 12.8 seconds at

The GLA45 AMG is among the best-handling vehicles on the market, bar none.





the figure eight in the same time as the

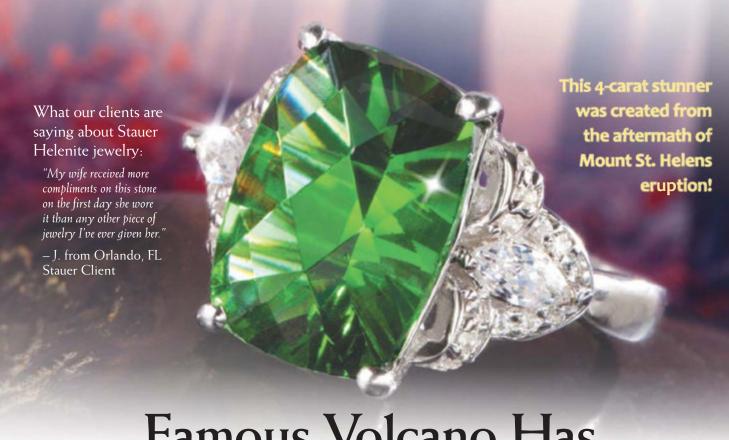
Macan Turbo—a supercar-like 25.0-second

was equally impressive, averaging 0.93 g.

lap at 0.78g average. Its skidpad performance

And then there are the GLA45's straight-line

SPORT AND COMFORT Even with those optional, sport-oriented Recard seats, the GLA45 AMG's saddle is among the most comfortable of this group. These are suitable thrones for royalty.



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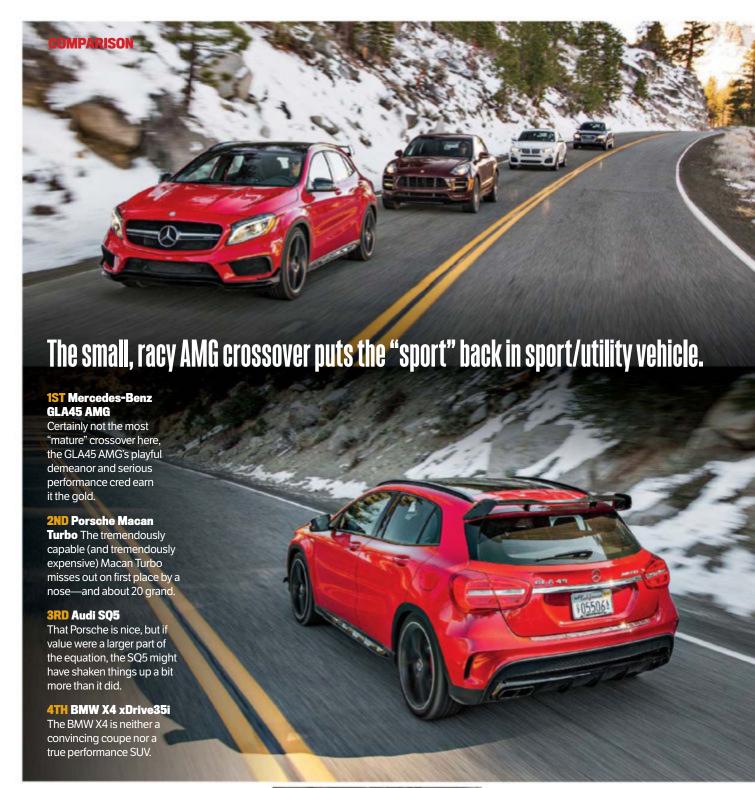
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107.9 mph. The GLA45 comes to a halt in just 103 feet in the 60-0 test. Those numbers are neck and neck with the Porsche. So where does the GLA really distinguish itself? Poundage. The GLA45 weighs nearly 1,000 pounds less than the Macan. In this case, less mass directly correlates to more fun. "Smallest guy in the group yet has the most personality—just ridiculously fun," Ayapana said. Evans agreed: "Great power, wonderful handling, tremendous grip, and good steering. You can't not have fun in this car." They're both right. There's no getting around how much personality the GLA has. "If the



GLA's turbo-four were a person, it would be a hyperactive 4-year-old on a dangerous combination of sugar and caffeine," Jurnecka wrote. The GLA is addictive. Whatever you ask of it, it delivers, whether you want a docile around-town ride, a comfortable road-tripper, or a street-going global rallycross car. The Porsche Macan Turbo and Mercedes-Benz GLA45 AMG were closely matched, but the price gap, fuel economy, and fun advantage give the small, racy AMG crossover what it takes to put the "sport" back in sport/utility vehicle and thus be crowned champ of the small, sporty German SUVs.

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	POWERTRAIN/CHASSIS	2015 Audi SQ5	2015 BMW X4 xDrive35i	2015 Mercedes-Benz GLA45 AMG	2015 Porsche Macan Turbo
_	DRIVETRAIN LAYOUT	Front-engine, AWD	Front-engine, AWD	Front-engine, AWD	Front-engine, AWD
â	ENGINE TYPE	Supercharged 90-deg V-6, alum block/heads	Turbocharged I-6, alum block/head	Turbocharged I-4, alum block/head	Twin-turbo 90-deg V-6, alum block/heads
2	VALVETRAIN	DOHC, 4 valves/cyl	DOHC, 4 valves/cyl	DOHC, 4 valves/cyl	DOHC, 4 valves/cyl
	DISPLACEMENT	182.8 cu in/2,995cc	181.7 cu in/2,979cc	121.5 cu in/1,991cc	220.0 cu in/3,605cc
9	COMPRESSION RATIO	10.3:1	10.0:1	8.6:1	10.5:1
_	POWER (SAE NET)	354 hp @ 6,000 rpm	300 hp @ 5,800 rpm	355 hp @ 6,000 rpm	400 hp @ 6,000 rpm
	TORQUE (SAE NET)	347 lb-ft @ 4,000 rpm	300 lb-ft @ 1,200 rpm	332 lb-ft @ 2,250 rpm	406 lb-ft @ 1,350 rpm
	REDLINE	6,800 rpm	7,000 rpm	6,250 rpm	6,800 rpm
	WEIGHT TO POWER	12.4 lb/hp	14.1 lb/hp	10.3 lb/hp	11.4 lb/hp
\sim	FRANSMISSION Axle/Final-drive ratio	8-speed automatic 3.08:1/2.05:1	8-speed automatic 3.39:1/2.26:1	7-speed twin-clutch automatic 4.13:1/1.98:1	7-speed twin-clutch automatic 4.13:1/2.15:1
_	SUSPENSION, FRONT; REAR	Multi-link, coil springs, anti-roll bar; multi-link, coil springs, anti-roll bar	Struts, coil springs, anti-roll bar; multi-link, coil springs, anti-roll bar	Struts, coil springs, anti-roll bar; multi-link, coil springs, anti-roll bar	Multi-link, air springs, adj shocks, anti-roll bar; multi-link, air springs, adj shocks, anti-roll bar
	STEERING RATIO	15.9:1	16.4:1	15.2:1	14.3:1
	TURNS LOCK-TO-LOCK	2.8	2.2	2.5	2.6
en.	BRAKES, F;R	15.0-in vented disc; 13.0-in vented disc. ABS	12.9-in vented disc; 13.0-in vented disc, ABS	13.8-in vented disc; 13.0-in vented disc, ABS	14.2-in vented disc; 14.0-in vented disc, ABS
	WHEELS, F;R	8.5 x 20 in, cast aluminum	8.5 x 20 in; 10.0 x 20 in, cast aluminum	8.0 x 20 in, cast aluminum	9.0 x 21 in; 10.0 x 21 in, forged aluminum
Ī	TIRES, F;R	255/45R20 101V M+S Dunlop SP Winter Sport 3D	245/40R20 99Y; 275/35R20 102Y Pirelli P Zero	235/40R20 96Y Continental ContiSportContact 5P	265/40R21 101Y; 295/35R21 103Y Michelin Latitude Sport 3
	DIMENSIONS				
	WHEELBASE	110.5 in	110.6 in	106.3 in	110.5 in
_	FRACK, F/R	64.2/64.0 in	62.8/63.4 in	61.7/61.7 in	65.2/65.0 in
_	LENGTH X WIDTH X HEIGHT	183.0 x 75.2 x 65.3 in	184.3 x 74.1 x 63.9 in	174.9 x 71.0 x 58.2 in	185.0 x 76.1 x 63.4-65.4 in
	GROUND CLEARANCE	7.9 in	8.0 in	4.8 in	7.1-9.1 in
_	APPROACH/DEPART ANGLE TURNING CIRCLE	25.0/20.0 deg 38.1 ft	26.0/23.0 deg	11.9/18.3 deg 38.8 ft	19.7-26.6/18.5-25.3 deg
	CURB WEIGHT	4,373 lb	39.0 ft 4,240 lb	3.646 lb	39.2 ft 4,544 lb
_	WEIGHT DIST, F/R	54/46%	51/49%	60/40%	55/45%
_	TOWING CAPACITY	4,400 lb	3,500 lb	Not recommended	4,400 lb
	SEATING CAPACITY	5	5	5	5
	HEADROOM, F/R	38.1/37.7 in	40.0/37.4 in	36.9/36.7 in	38.1/37.7 in (est)
	LEGROOM, F/R	41.0/37.4 in	40.4/34.8 in	41.9/33.9 in	41.0/37.4 in (est)
	SHOULDER ROOM, F/R	57.7/56.4 in	57.2/56.0 in	54.8/53.1 in	57.7/56.4 in (est)
	CARGO VOL BEH F/R	57.3/29.1 cu ft	49.4/17.7 cu ft	42.0/11.8 cu ft	53.0/17.7 cu ft
_	TEST DATA Acceleration to MPH				
_	D-30	1.6 sec	1.8 sec	1.5 sec	1.4 sec
	0-40	2.3	2.7	2.2	2.2
	0-50	3.3	3.8	3.1	3.1
-	0-60	4.4	5.2	4.3	4.2
	D-70	5.8	6.9	5.5	5.6
_	0-80	7.4	8.9	7.0	7.1
-	D-90	9.4	11.4	8.8	9.0
	0-100 Passing, 45-65 MPH	11.8 2.3	14.4 2.8	10.9	11.3 2.3
	QUARTER MILE	13.1 sec @ 104.2 mph	13.9 sec @ 98.8 mph	12.8 sec @ 107.9 mph	12.9 sec @ 106.2 mph
	BRAKING. 60-0 MPH	123 ft	113 ft	103 ft	102 ft
	LATERAL ACCELERATION	0.82 g (avg)	0.85 g (avg)	0.93 g (avg)	0.90 g (avg)
91	MT FIGURE EIGHT	26.5 sec @ 0.72 g (avg)	26.2 sec @ 0.71 g (avg)	25.0 sec @ 0.78 g (avg)	25.0 sec @ 0.78 g (avg)
_	TOP-GEAR REVS @ 60 MPH	1,550 rpm	1,600 rpm	1,450 rpm	1,800 rpm
_	CONSUMER INFO		111.222		
_	BASE PRICE	\$53,625	\$48,950	\$49,225	\$73,295
-	PRICE AS TESTED STABILITY/TRACTION CONTROL	\$59,525	\$64,525	\$65,985	\$84,850
_	AIRBAGS	Yes/Yes Dual front, f/r side, f/r curtain	Yes/Yes Dual front, front side, f/r curtain	Yes/Yes Dual front, f/r side, f/r curtain,	Yes/Yes Dual front, f/r side,
	BASIC WARRANTY			front knee	f/r curtain, front knee
_	BASIC WARKANTY POWERTRAIN WARRANTY	4 yrs/50,000 miles 4 yrs/50,000 miles	4 yrs/50,000 miles 4 yrs/50,000 miles	4 yrs/50,000 miles 4 yrs/50,000 miles	4 yrs/50,000 miles 4 yrs/50,000 miles
-	ROADSIDE ASSISTANCE	4 yrs/50,000 miles	4 yrs/Unlimited	Unlimited	4 yrs/50,000 miles
-	FUEL CAPACITY	19.8 gal	17.7 gal	16.9 gal	19.8 gal
_	EPA CITY/HWY/COMB ECON	17/24/19 mpg	19/27/22 mpg	23/29/25 mpg	17/23/19 mpg
_	ENERGY CONS, CITY/HWY	211/147 kW-hrs/100 miles	177/125 kW-hrs/100 miles	147/116 kW-hrs/100 miles	198/147 kW-hrs/100 miles
_	CO2 EMISSIONS, COMB	1.05 lb/mile	0.88 lb/mile	0.76 lb/mile	1.01 lb/mile
	RECOMMENDED FUEL	Unleaded premium	Unleaded premium	Unleaded premium	Unleaded premium
_	REAL MPG, CITY/HWY/COMB	20.8/29.4/24.0 mpg	16.2/24.4/19.0 mpg	25.3/31.9/27.9 mpg	16.9/21.6/18.8 mpg
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CHEVROLET MALIBU

INGENUITY & INNOVATION

Chevrolet Malibu takes technology to a new level throughout the vehicle, packing a one-two punch of sophisticated power and suspension technology with connectivity and fuel efficiency.

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2.5L Engine

INTELLIGENT STOP/START TECHNOLOGY

Under certain conditions, the engine turns off at a stop and seamlessly starts again as soon as you lift your foot off the brake. The intelligent stop/start technology — along with other advancements such as Direct Injection and Variable Valve Timing — can increase city mileage by more than 10 percent for an EPA-estimated 25 MPG city. The stop/start technology uses a reinforced Absorbent Glass Mat (AGM) starting battery. There's a beefed-up tandem-solenoid starter motor and even an auxiliary battery located in the rear of the car — plus an electric hydraulic pump keeps fluid circulating through the transmission to make sure it's always pressured and primed.



2.0L Turbo & 2.5L Engine

COOLER, CLEANER, QUICKER

Direct Injection helps reduce cold-start emissions and allows for a higher compression ratio. Direct Injection helps cool the overall intake process, allowing for higher boost from the ECOTEC® 2.0-liter engine's turbocharger.





FOR MORE INFORMATION ON THE MALIBU, GO TO CHEVROLET.COM/MALIBU

FIND NEW ROADS

2.5L Engine

SEAMLESS OPERATION

Intake Valve Lift Control technology enables variable intake valve lift, duration and timing over a wide range of engine operation. "Intake Valve Lift Control works so seamlessly, drivers aren't likely to notice it at all," sald Mike Katerberg, Chevrolet global chief engineer for ECOTEC engines. "What they will notice is a fuel savings of up to one mile per gallon, offering an EPA-estimated 25 city/36 highway."

25

36

Intelligent stop/start technology, Intake Valve Lift Control and a 6745 transmission all contribute to the 2.5-liter's EPA-estimated fuel economy.

4GLTE Wi-Fil

GET CONNECTED

The available built-in 4G LTE Wi-Fi¹ offers a better experience than your smartphone and the ability to connect up to seven devices at once. So you can stream your music playlist while your passengers stream their favorite games or movies — keeping everyone happy.



2.0L Turbo

PERFECTED POWER

In an engine's combustion cycle, timing is everything. The available ECOTEC 2.0-liter turbocharged engine has nitrided intake valves. The sodium-filled stems of the exhaust valves enhance heat transfer, maintaining a lower, more uniform valve temperature, reducing valve guide wear and improving valve seat wear.



2.0L Turbo

POWER BOOSTER

The available turbocharged ECOTEC 2.0-liter, like the 2.5-liter engine, also has double overhead camshafts and Continuously Variable Valve Timing. The 2.0-liter has a turbocharger that helps generate 259 horsepower and a best-in-class 295 lb.-ft. of torque that's available at engine speeds as low as 3000 rpm.



Malibu 2.0L	295 torque
Audi A6 2.0L	258 torque
BMW 528i	260 torque
Porsche Cayman	213 torque

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CHEVROLET /



Words Scott Evans

GET SWEDED

In the movie "Be Kind Rewind," two friends replace accidentally erased rental video tapes with homemade re-enactments they call "Swedish" or "Sweded" editions. The new movies are quirky and a bit different, but honest. Volvo has always been a bit quirky and different, but the honesty in its purpose, its function, and its intent has always been obvious. The original XC90 embodied this, and the all-new SUV carries the mantle very well indeed.

Perhaps the best place to start is inside the car. Craftsmanship has always been a brand value, but the company is now more interested in you seeing and feeling it. The leather is of distinctly higher quality and stitched neatly to nearly every interior surface. What's not leather is intriguingly textured metal trim or wood, with a spot of soft-touch plastic here and there.

The front-row seats are comfortable and offer a surprising amount of lateral support



for the class of vehicle. The second-row outboard seats are almost as good, and they both slide and tilt. Even the third row is a decent place to be if you're 5-foot-9 or shorter.

One of the XC90's most prominent and important new features is a 9-inch touch-screen that is for all intents and purposes a tablet computer in the dash. Called Sensus, it's the best touchscreen entertainment and information system on the market. The interface is incredibly intuitive for anyone who's used a smartphone or tablet in the past five years. The functions are arranged logically based on how often they're likely to be used, and it reacts just as quickly to every touch and swipe as your phone or tablet. It's even got a





convenient home button at the bottom to get

convenient home button at the bottom to get you back to the homepage.

Interior issues are minor. There's wind noise around the upper corners of the windshield, faintly interrupting an otherwise quiet interior. It's matched by engine noise that could be less noticeable. The unintuitive electronic gear selector on the T8 plug-in hybrid model is a minor annoyance. Finally, more USB plugs are strongly suggested. One in the armrest just doesn't cut it anymore.

In another big shift, Volvo has committed to four-cylinder engines only. Each engine is supercharged and turbocharged for consistent and linear power. The standard T6 model employs a 316-horsepower version of this engine producing 295 lb-ft of torque. This is 2.0L/316-hp/295lb-ft supercharged and turbocharged DOHC 16-valve I-4; 2.0L/318-hp/295-lb-ft supercharged and turbocharged DOHC 16-valve I-4 plus 82-hp rear electric motor; 400 hp/472 lb-ft comb (est)

8-speed automatic 4,650-5,200 lb (mfr)

117.5 in

TRANSMISSION

CURB WEIGHT

WHEELBASE

LXWXH

0-60 MPH

EPA CITY/HWY/COMB FUEL ECON

ON SALE IN U.S.

 $194.8 \times 79.1 \times 69.9 \text{ in}$ 5.8-6.1 sec (mfr est)

Not yet rated

July (T6), October (T8, T6 R-Design)

fed to an eight-speed automatic transmission and standard Haldex all-wheel-drive system. In the default Comfort mode, the power feels barely more than adequate for the size and bulk of the vehicle, but dial into Power mode, and it comes alive. The power curve builds steeply as revs increase, and the transmission smartly and smoothly swaps gears along the way. The all-wheel-drive system can send up to 60 percent of the power to the rear wheels and is invisible to the driver. Official fuel

economy numbers haven't been announced, but Volvo hopes to be best among three-row luxury crossovers.

The T8 plug-in hybrid model uses a 318-horsepower version of the same engine fitted with a starter motor-generator that generates electricity for the hybrid components, starts and restarts the engine as needed, and can reduce the load on the engine by helping under certain conditions. Actual electric drive power happens at the rear axle, which is fitted with an 82-hp motor powered by a 9.2-kilowatt-hour battery in the center tunnel. Volvo claims a total system rating of about 400 hp and 472 lb-ft of torque.

With no mechanical connection between the front and rear powertrains, it's up to the computer to blend power, and it does so seamlessly. In the default Hybrid mode, it feels only marginally more powerful than the T6, but the Power mode makes it downright quick. Pure EV mode is strong enough to get you around town if you're not an aggressive driver. Volvo is claiming up to 25 miles of EV driving range and 2.5 hours to charge fully on a 240-volt plug or 5 hours on a regular 110-volt wall socket. When you're cooking with gas, Volvo says to expect 59 mpg-e.

Speeding up requires slowing down, and it's a similar story. The T6 provides good stopping power and a nice response from the brake pedal. The T8 suffers from familiar hybrid brake issues. The pedal is abnormally firm, and the feedback is vague. Braking power itself is fine. Volvo says the issue will be addressed before the T8 goes on sale.

Steering is also inconsistent between the two models. Both use electric power steering, and both suffer odd steering weighting, as if rubber bands are pulling the steering back to center. In the T6, it's barely perceptible, so the average customer is unlikely to notice. It's more pronounced in the T8, but Volvo says that's on the fix list, too.

What is consistent is the handling. Both handle well for their size and weight. Body control is impressive with no unwanted movements. Both can feel tippy if you corner hard, but that's expected from a big SUV. Otherwise, the XC90 leans smoothly on its outside tires. The fat Pirelli tires grip well without sending much noise to the cabin.

The ride, however, is firm for a luxury SUV. Impacts and bad road surfaces are handled well, but you'll feel a lot of bumps, if only slightly. Both test vehicles available were fitted with the optional air suspension and adaptive dampers, so ride and handling will likely differ on base models.

The all-new XC90 isn't perfect, but it's quite close. At \$49,895 to start, it's not the cheapest luxury three-row SUV on the market, but with most of its equipment standard, it's among the best values in the class. It is altogether an excellent luxury SUV and exactly the product Volvo needs at this critical inflection point in the company's history.

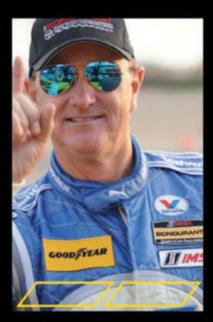














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FIRST LOOK | McLaren 570S

Let's say you're an unsuspecting air molecule that's just wafted in off the Allegheny Plateau and onto the circuit at New York's

Monticello Motor Club. A bunch of fund managers, Wall Street bankers, and entrepreneurs are exercising their 911 Turbos, Aston V12 Vantages, Audi R8 V10s, and the newest road car from the world's second-oldest F1 team, McLaren. You might get your greatest thrill on a ride over and through the McLaren. Its designer, Rob Melville, has taken pains to make the ride easy for you by sculpting every high-contrast design element in such a way as to show unsuspecting air molecules like you the fastest, most efficient way over, under, around, or through the new 540C and 570S.

Oh sure, every manufacturer spends endless hours and oodles of dollars sculpting cars in a wind tunnel these days, but few display the results as obviously as McLaren has with its newest product line. Melville had little choice. His aerodynamic elements all have to work harder because these "Sport"

Series" models are to serve as the entry point to the brand with base pricing that undercuts the 650S by as much as \$100,000. That means it must get by without the active aerodynamic elements, variable suspension tuning, and other pricey tech that differentiates McLaren's "Super Series" (650S, 675LT, and Asia-only 625C) and "Ultimate Series" (P1) cars.

So the highest-energy air hitting the nose gets ushered to where it can do the greatest



good. Should our air molecule and his closest pals strike the sharp horizontal and less sharp vertical crease at the center of the nose and part company, the lower ones follow the dark panels through a set of vanes into the left and right low-temperature engine radiators sitting just ahead of each front tire and exit via an air curtain duct and through the wheelwell. This angrier turbulent air washes along the lower body-colored panels on the doors, staying out of the high-temperature radiators behind the rear scoops. Those are reserved for air taking the high road. Some of it flows over the fender and wheel flare into that dark lower recess on the door. The rest goes around the mirror stanchions and under that upper body-colored door "tendon," which is supported by an aero wing. This smooth, high-powered air flows through those rear radiators and out the mesh grilles inside the McLaren-logo taillamps while the air that missed the radiators follows the dark windowsill trim along the side glass and under the flying buttresses. This detaches





WING MAN At left, you can see the vertical door wing that helps keep high-energy air attached to the body. These outer body-color door parts are made from SMC plastic, but most of the exterior body panels are aluminum. At right, you can peek through the flying buttress.







ARAPPARENT

SPORT SERIES DESIGN ELEMENTS SHOW AIR JUST WHERE TO GO

Words Frank Markus



and smooths the air tumbling off the roof, sucks hot air out of the engine compartment, and contributes up to 17 pounds of rear downforce at high speeds. Final drag and lift coefficients haven't been announced, but Melville says leveraging this high-energy air pays off in weight and package savings by enabling smaller, lighter radiators.

If the bodywork aspires to be approachable to air molecules, the cockpit and driving dynamics aspire to be approachable to new, possibly less-skilled buyers. Product manager Donna Falconer describes the target customer as someone who will own fewer cars and

hence use this one more often than 650S owners do. As such, it needs to be easier to get in and out of, to drive, and to interact with. Toward those ends, the new "Monocell II" carbon-fiber tub features lower sills that are easier to climb over. The doors open wider and higher, easing access without diminishing their supercar drama. There's a brand-new IRIS infotainment system controlled by a large vertical touchscreen, a more ergonomic dash, a cupholder (!), a larger front trunk, and space behind the front seats for a set of golf clubs. A proper glove

box, a deep center console bin, and in-door compartments boost interior storage. A high level of personalization will also be possible, including carbon-fiber-shell racing seats sized to fit. Oh, and a small fish-eye camera low on the front fascia will be able to record "Rendezvous"-like track videos.

And what of the running gear? The M838T E 3.8-liter, twin-turbo V-8 will be lightly detuned from the current 650S spec to produce 532 hp and 398 lb-ft on the entry-level 540C (for "Club") and 562 hp and 443 lb-ft for the 570S (for "Sport"). Interestingly,





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nnovation is the path to the future. $oldsymbol{1}$ Stauer takes that seriously. That's why we developed the Compendium Hybrid, a stunningly-designed hybrid chronograph with over one dozen analog and digital functions that is more versatile than any watch that we have ever engineered.

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The watch's extraordinary dial seamlessly blends an analog watch face with a stylish digital display. Three super-bright luminous hands keep time along the inner dial, while a trio of circular LCD windows track the hour, minutes and seconds. An eve-

catching digital semicircle animates in time with the second hand and shows the day of the week. The watch also features a rotating bezel, stopwatch and alarm The Compendium: The functions and green spectacular face of the electro-luminescence latest watch technology.



backlight. The Compendium Hybrid secures with a rugged stainless steel band and is water-resistant to 3 ATM.

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access to the engine is like in a Porsche Cayman—there's a hatch for fluid fills only. Removing the screens and panels covering the rest of the engine is a service procedure requiring tools. The transmission is essentially the same seven-speed twin-clutch box from the 650S, and the basic suspension geometry and setup will likely carry over, but with conventional anti-roll bars and fixed-rate shocks in place of the adaptive elements.

McLaren lists the dry weight as 37 pounds lighter than the 650S and promises both models will boast class-leading weight-to-power, enabling the 570S to accelerate to

100 mph a half-second quicker than a 911 Turbo S (that would make it 6.2 seconds, according to our figures), with 0-200 km/h (124 mph) happening 0.4 second quicker than in a Lambo Huracán (for 8.8 seconds). AWD launch traction will give these and other competitors an advantage off the line and through 60 mph, but then McLaren never competed in NHRA drag racing. Its cars shine on handling circuits.

These youngest heirs to the McLaren roadcar throne will hit dealerships in the fourth quarter of 2015, first with the 570S, priced at about \$185K. The 540C will likely follow in 2016, priced at \$165K and featuring a less aggressive splitter and diffuser and different interior trim than on this 570S, which is decked out in optional carbon-fiber trim. (Those parts would otherwise be painted dark palladium.) That's \$80K-\$100K less than a 650S for a carbon-tubbed, mid-engine, track-focused car that looks a lot like a \$1.15 million P1—and nothing like a million other 911s. The choice would be clear if I were the New York banker with the Monticello membership. Or that unsuspecting air molecule. ■







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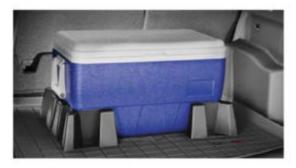


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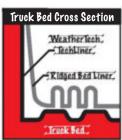


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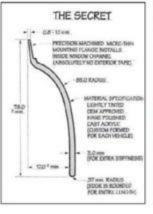
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FIRST TEST | 2014 Lamborghini Huracán LP 610-4

When writing a car review, I generally try to throw some misdirection into the first paragraph to keep the reader

guessing. Not here. "Wow, wow, wow, WOW! That's better than any Ferrari I've ever driven!" So exclaimed Motor Trend hot shoe Randy Pobst as he swung open the Lamborghini Huracán's door and jumped onto his feet. His smile was a mile wide. Randy had just finished five laps of Big Willow, the infamously high-speed track north of Los Angeles. Randy usually performs three hot laps for us when he's trying to set a fast time. "I took a couple extra because the car's so good," he admitted. Randy's not alone. I let one of our video guys drive Kermit the Lambo to grab a spare battery. When he climbed out of the Huracán, he hugged me.

Let's just cut right to the performance figures. The 3,419-pound Huracán is AWD and has a mid-mounted, 5.2-liter naturally aspirated V-10 with 602 horsepower and 413 lb-ft of torque. That howler of a motor sends its fury to a seven-speed twin-clutch gearbox. The following numbers were recorded on



Pirelli P Zero tires (245/30R20 front, 305/30R20 rear), a good but not particularly aggressive street tire. Zero to 60 mph happens in 2.8 seconds. That's very quick, especially for a naturally aspirated car. Just to give you some context, the Huracán's obvious competitors—the Ferrari 458 Italia and McLaren 650S—both need 3.0 seconds. The normally giant-slaying Nissan GT-R NISMO hits 60 mph in 2.9 seconds. Granted, a Porsche 991 Turbo S is quicker, hitting 60 mph in 2.6 seconds.

Things get especially noteworthy in the quarter mile. The Ferrari needs 11.1 seconds at 125.2 mph. The Nissan needs 11.0 flat at 126.6 mph. The Porsche needs 10.9 seconds at 123.7 mph. The kooky-quick McLaren needs only 10.7 seconds at 134.0 mph. The Lamborghini Huracán beats 'em all, requiring only 10.6 seconds to travel 1,320 feet with a trap speed of 132.8 mph. A couple of points: Ferrari never let us test a 458 Speciale, and the McLaren 675LT isn't on sale until later this summer. Moreover, the Huracán is quicker than its big brother, the Aventador, which needs 2.9 seconds to hit 60 mph and runs the quarter mile in 10.8 seconds at 132.3 mph.

Of course, those are the numbers for the hefty 4,109-pound U.S.-spec Aventador. In Italy we tested one that weighed 3,817 pounds, hit 60 mph in 2.8 seconds, and did the quarter mile in 10.6 seconds at 133.9 mph. Caveat emptor. As it stands, production cars we've tested that are quicker in the quarter mile are the Bugatti Veyron (10.4 at 139.9 mph), Porsche 918 (10.0 at 145.2 mph), and



THE STUFF This is why we used to love Lamborghinis. Look at those crazy shapes. The Huracán changes the narrative.

McLaren P1 (9.8 at 148.9 mph). The LaFerrari? Who knows? Ferrari won't let anyone test the damn thing. Anyhow, the Huracán keeps and bests some pretty good company.

As for other measurements, stopping from 60 mph requires a very average 104 feet. Randy noted that his only gripe about the Huracán was the brakes. Not necessarily the brakes themselves, but the ABS software that lets the tires lock up under hard braking. However, the McLaren 650S takes 105 feet, whereas the Ferrari 458 needs only 99 feet. The Turbo S takes 100 feet, and the NISMO needs just 97. I should also mention that the other four cars were wearing much more aggressive rubber. That leads me to my next point, our figureeight test. The obnoxiously green (\$4,500 for the paint) Lambo requires 23.0 seconds to do the deed. The McLaren takes 23.1, the Ferrari takes 24.0, the Porsche Turbo S takes 23.0, and the Nissan GT-R NISMO needs 23.1. Had the Huracán worn tires like the others it would have easily broken into the 22s.

We wound up running the Huracán at Big Willow with Pirelli Trofeo Rs. Why? The P Zeros were pretty mangled after a day of testing (and mock testing for video). The



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only spare set of wheels we had was skinned in Trofeo Rs. The bad news? They're not a factory option. The factory optional tires for the Huracán are P Zero Corsas or Rossos. Why did we have the wrong tires? I don't know. But we had to change them. So the result you're about to read gets a big fat asterisk next to it. Randy lapped Big Willow's bumpy 2.42 miles in 1:25.17. A blisteringly quick time. For instance, the McLaren 650S does it in 1:25.88. The NISMO does it in 1:25.70, and the Porsche takes 1:27.17. (We never tested the Ferrari 458 at Big Willow.) But yeah, cheater tires. Is it within the realm of possibilities that the person who purchases a \$269,305 car might go down to Tire Rack and pick up a set of Trofeo R tires for track use? You betcha. However, consider this lap time more

Mid-engine, AWD, 2-pass, 2-door coupe ENGINE 5.2L/602-hp/413-lb-ft DOHC 40-valve V-10 TRANSMISSION 7-speed twin-clutch **CURB WEIGHT (F/R DIST)** 3,419 lb (42/58%) 103.1 in WHEELBASE **LENGTH X WIDTH X HEIGHT** 175.6 x 75.7 x 45.9 in 0-60 MPH 2.8 sec **OUARTER MILE** 10.6 sec @ 132.8 mph **BRAKING, 60-0 MPH** 104 ft LATERAL ACCELERATION 1.02 g (avg) MT FIGURE EIGHT 23.0 sec @ 0.98 g (avg) EPA CITY/HWY/COMB 14/20/16 mpg ENERGY CONS, CITY/HWY 241/169 kW-hrs/100

\$269,305

1.20 lb/mile

PRICE AS TESTED

VEHICLE LAYOUT

a guideline than an out-and-out result. The good news? We're getting a Huracán back and will retest at Big Willow with proper tires.

As I often say, those are just numbers. I want to get back to the top, back to what Randy proclaimed. The Lamborghini Huracán is one of the three best performance cars I've ever driven—the other two were the Ferrari 458 Italia and the Pagani Huayra. There's a part of my brain—call it the supercar cortex—that starts tingling when I get behind the wheel of something truly special. The Huracán lit it up like a supernova. Is the Huracán better than the other Italians? Impossible to say without driving the three back to back. But I will note that the 458 is basically out of production, soon to be replaced by the (turbocharged) 488 GTB, and the Pagani starts life at \$1.75 or so million.

Why is the Huracán so great? The glorious, naturally aspirated engine is part of it. This green monster didn't have the optional magnetic dampers. Instead there's a fixed suspension that beat me up at 75 mph on the freeway (especially after climbing out of an S65 AMG) but behaved near perfectly at 150-plus mph on the racetrack and even better when tearing up a back road. My gut says this is the suspension you want. This Huracán also didn't have Dynamic Steering, which sounds to me like something out of the Audi parts bin. After all, the Huracán is a mechanical twin of the Audi R8. I know I'll hear about it in the letters, but I've always hated Audi's adjustable steering. There's no good setting, and the wheel feels numb no matter what you choose. The Huracán's steering is so excellent that Randy didn't know the car was AWD until after his laps. I also think the thin, nearly cushionless carbon-fiber seats help overall performance by keeping the weight down.

The Huracán is the first Lamborghini that lives up to the promise of its striking, gorgeous design. When Ferruccio Lamborghini founded his car company in 1963, the idea was that his cars would not only be an alternative to Enzo Ferrari's prancing stallions, but would in fact be better. It's taken them 52 years, but now there exists a Lamborghini that is easily as good as the Ferrari it directly competes against. And if you believe me and Randy, the Huracán's better.

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I'm convinced there's no more blatant sign that you've aged out of the hip crowd than when you have to ask for an explanation of lingo the kids use these days. It seems like not that long ago I was DJ-ing high school dances and up on the latest songs and pop culture. Peers and elders used to ask me what the new slang meant. Then the song "All About That Bass" came out. Having heard only the ultrarepetitive chorus, I assumed it was about bass. I felt very old when it was explained as a euphemism for booty. I would've known

that if I'd listened to the rest of the song, but I was too busy yelling at kids to get off my lawn. Thankfully, the song isn't another crass objectification of women but rather a positive message about ignoring unrealistic beauty standards and loving yourself as you are.

Also now tragically unhip, like me, are station wagons. Sure, there are die-hard fans, particularly in the automotive media. For most people, though, they're SUVs without the ability to see over traffic and therefore pointless. If wagons had feelings, they might have body image problems. But as the song



YOU'RE COVERED If and when someone says "I hope you've got a big trunk 'cause I'm going to put my bike in it," you'll be ready.







says, "Every inch of you is perfect from the bottom to the top." Yes, I Googled the lyrics.

The defining characteristic of a wagon, of course, is a large trunk with ample space for junk. By modern automotive beauty standards, that big booty isn't sexy. Sure, there are shooting brakes that look slick, but they sacrifice the wagon's key feature (space) in the name of image. Fortunately for the wagon lovers out there, the all-new Volkswagen Golf SportWagen is having none of that fatshaming. It's unapologetically a wagon, and there's plenty to love about it.

Forget sheetmetal-deep beauty and appreciate the SportWagen's inner beauty. Underneath, it's a Golf, and the new Golf is a good car. So good we named it Car of the Year. The Golf is well-designed, well-built, drives nicely, handles well, and gets good fuel economy. And the SportWagen is a Golf with a big rear end, which is a sincere compliment.

It drives like a slightly heavier Golf, as you might assume. That the extra weight is in the back makes little difference. The SportWagen rides quite nicely with a touch of sporty firmness. Taking a corner, the SportWagen feels like it's carrying a bit more weight up top—because it is—but the body is well-controlled and leans confidently on its tires. It's not easily upset by bumps or dips and can be driven aggressively without complaint.

If there's one place you might notice a difference, it's in acceleration. We haven't tested the SportWagen yet, but it feels more sluggish than the lighter Golf. It runs the same 170-hp, 1.8-liter turbo-four and 150-hp, 2.0-liter turbodiesel four as the standard Golf,

BASE PRICE RANGE \$22,215-\$25,415 Front-engine, FWD, 5-pass, 4-door wagon **VEHICLE LAYOUT ENGINES** 1.8L/170-hp/184-199-lb-ft turbocharged DOHC 16-valve I-4; 2.0L/150hp/236-lb-ft turbodiesel DOHC 16-valve I-4 **TRANSMISSIONS** 5-speed manual, 6-speed manual, 6-speed automatic, 6-speed twin-clutch auto **CURB WEIGHT** 3,100-3,250 lb (mfr) **WHEELBASE** 103.5-103.7 in LXWXH 179.6 x 70.8 x 58.3 in 0-60 MPH 8.1-9.2 sec (MT est) EPA CITY/HWY/COMB 25-31/35-43/29-35 mpg 122-135/88-96 kW-hrs/100 miles **CO2 EMISSIONS, COMB** 0.63-0.68 lb/mile ON SALE IN U.S. Currently

so we expect the heavier SportWagen to reach 60 mph in just more than 8 seconds on gas and just more than 9 seconds with the diesel.

On the gas car, power delivery comes via a five-speed manual or six-speed auto. On the diesel, choose between a six-speed manual or six-speed dual-clutch auto. Regardless of total gear count, the manuals both have somewhat long but accurate shifter throws and go into gear with a satisfactory click. Just like in a Golf. Also like a Golf, the two autos return smooth, snappy gear changes, the dual-clutch being just a bit snappier. As with the Golf again, the manual transmission's clutch isn't as grabby as you'd expect, and the uninitiated

might stall it. More throttle cures all. On the plus side, none of this criticism applies to the brakes, which work just as nicely as the Golf's.

You'll find the rest of the cabin equally Golf-like. The seats are just as comfortable, the information and entertainment system is the same, it's just as quiet, and it's even as easy to see out of, as they've just moved the rear window back a bit. As you'd expect, there's a lot more room for cargo than in the standard Golf-30.4-66.5 cubic feet versus 22.8-52.7. That tops some compact crossovers. Stealing another trick from those crossovers, the SportWagen now has rear seat release levers in the cargo area for easy seat folding and cargo loading. The load floor is also slightly lower and wider than before, and the tailgate opens nearly vertically. Don't let its Golf-ness fool you. This car is made to haul.

Crossover-like cargo capacity doesn't mean crossover-like fuel economy, though. It's actually a little better in the city than the Golf with the TDI manual. Highway economy slips a bit with all transmission options. Still, with the diesel pulling 43 mpg on the highway, there isn't a CUV that can touch it.

The new Golf SportWagen might not single-handedly convince the majority of the buying public that wagons are cool or that a bigger backside is as beautiful as a smaller one, but it will continue to be an excellent car and give owners continued reason to boast to their friends about their great station wagon. And if you're all about that literal bass, there's a Fender stereo package that bumps pretty well, too.





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FIRST DRIVE | Ford Edge | FROM BREAKOUT FRESHMAN TO STANDOUT SOPHOMORE

Within minutes after I posted a 2015 Ford Edge Titanium photo on Instagram, the comments already showed a consis-

tent theme: "Looks like the RAV4," wrote mrbrightside725. "Doesn't the new Edge look like the Santa Fe?" asked rdederick. "Nice Honda CR-V," noted danieljay6910. But it was j_runemova_23's post that stood out most: "Looks like everything else all together." The popular Web meme I SEEN'T IT! instantly came to mind. My Instagram insta-poll was clear: The Edge's design is a little too familiar.

But Kevin George, the Ford Edge's chief designer, seemed to see this coming when he talked to journalists the night before an event in Scottsdale, Arizona. "We didn't want to reinvent what we had," he said as he pointed out its uncomplicated exterior and familiar proportions. "We wanted to leverage the good." And out here in the intense Arizona sunlight on State Route 188, the actual Edge (as compared with my posted pic) appears simultaneously handsome and modern to the max—though not as in-yourface as, say, the 2015 Nissan Murano, a key competitor. "It's a runner now," George said. "Slender but muscular."

The 2015 Edge's ground-up redesign adds 1 inch to its predecessor's wheelbase, a bit less than 2 inches to its height, and nearly 4 inches to its length. Horizontal all-LED taillamps now wrap around the sharply beveled corner, almost to the C-pillar, and the simplified nose incorporates slim headlights and a familial three-bar grille (and models with EcoBoost engines have active grille shutters).

Behind those grilles purrs a 2.7-liter EcoBoost V-6 with 315 horses for the nimble Sport version (its only engine) or a 245-horse, 2.0-liter EcoBoost inline-four powering the front-drive Titanium trim









stiffer springs, monotube rear dampers, and thicker anti-roll bars. Curiously, it delivered a suppler ride than the front-drive Titanium model on 20-inch alloys, which tended to bounce over bigger obstacles rather than absorb them like the Sport.

The cooled and heated 10-way power adjustable front seats of the Edge Titanium and Sport provide good comfort and support in bumps and corners, but the crossover's big stride in cabin quietness is even more noticeable. Robust insulation, extensive body sealing, and acoustic windshield glass and underbody panels (and in the case of the Titanium, acoustic glass for the front passenger doors) all work together to quell cabin noise to a remarkable extent. Wind isn't the only thing that gets hushed. Even the Sport AWD's optional 21-inch wheel/tire setup is felt more than

BASE PRICE RANG VEHICLE LAYOUT

ENGINES

Front-engine, FWD/AWD, 5-pass, 4-door SUV

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heard, helped, no doubt, by the Active Noise Cancellation system, which pumps opposing sound waves into the space. The Titanium FWD is no less silent.

The end of my drive gave a good chance to climb around the 2015 Edge's interior. Nearly every front and rear seating dimension-headroom, legroom, shoulder room, hiproom-has seen modest growth. So too has cargo space behind the second row (39.2 cubic feet versus 32.2). And all around me, softer, higher-quality, painted, and plated accents decorate high-touch areas. Cubbies galore populate the dash, center console, doors, and even the space beside both knees, with 10count 'em, 10-cupholders for knickknacks and beverages. Folks in the rear 60/40 split seat have cubbies, too, plus two 12-volt plugs that ought to keep device-toting kids quiet for hours. Outdoorsy-types will enjoy the Sport's Panoramic Vista Roof that expands the cabin's already airy feel.

Lazier drivers can opt for the Enhanced Park Assist package that teams perpendicular parking, parallel parking, and park out assist technologies. The new 180-degree front camera makes pulling out of parking spots or alleys a stress-free task, and in a trial, the ensemble worked flawlessly in parallel and perpendicular situations, needing me to only brake and engage forward or reverse. It does the rest.

The Edge has been the sales king in the heated two-row-midsize CUV segment. So, like Kendrick Lamar cementing his claim as rap royalty with his sophomore album, getting this one right is imperative, especially with it headed to European and Chinese customers. The Edge might not wow Instagrammers, but the ahhhs it'll receive for the beautiful accomplishments beneath its skin ought to keep it looking good in the sales race for years.







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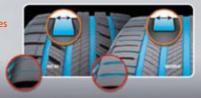


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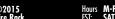
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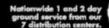








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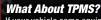
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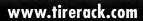
















ARRIVAL 2015 Audi A3 1.8T Christian Seabaugh



"I'm really geeking out over our A3's **MMI** system: picture destination, Google Maps, Wi-Fi. Where do sign up?" @C_Seabaugh

EPA CITY/HWY/COMB FUEL ECON 23/33/27 MPG BASE PRICE \$30,795 PRICE AS TESTED \$36.645

In the past year we've seen luxury automakers refocus on entry-luxe models, but Audi seems to be taking the segment the most seriously with

Although companies such as Acura and Mercedes-Benz only offer up to two powertrains and one body style with their entry-level cars, Audi has fired off a full salvo. The A3 range includes three gas variants, a diesel, a PHEV, front- or all-wheel drive, and three different body styles. And we're getting the chance to spend

Over the next 12 months,

the new 2015 A3.

a year with the best of the bunch.

we'll sample the three A3 variants for four months each: a base A3 1.8T, a diesel-sipping A3 TDI, and a 292-hp S3. Although Audi offers the A3 in sedan, hatchback, and convertible body styles, we'll likely stick to the sedan for consistency's sake. Each version of the A3 will get its fair share of road trips, commuting, and dealer visits.

First to arrive was this \$30,795 silver A3 1.8T sedan with the Premium Plus trim bringing it to \$33,345. Its 1.8-liter, turbocharged I-4 makes a healthy 170 hp and 200 lb-ft of torque, and it drives the front wheels through an S-Tronic six-speed dual-clutch automatic.

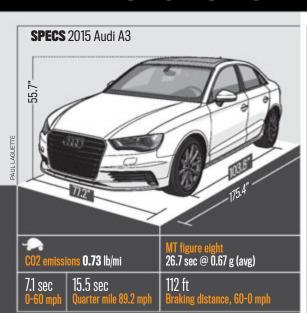
Leather seats, HID headlamps with LED running lamps and taillights, and a "panoramic" ("big" is a more apt description) sunroof are standard. The Premium Plus trim adds heated front seats, keyless start, and 18-inch wheels. We decided to add the \$2,600 MMI Navigation Plus package, which includes the most advanced version of Audi's MMI infotainment system available. Tack on the \$550 charge for our A3's



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RIDE ALONG FOR UPDATES ON OUR LONG-TERM FLEET



Vehicle Layout Front-engine, FWD, 5-pass, 4-door sedan Engine 1.8L/170-hp/200-lb-ft turbo DOHC 16-valve I-4 Transmission 6-speed twin-clutch auto Curb Weight (F/R Dist) 3,138 lb (60/40%) Lateral Acceleration 0.88 g (avg) Energy Cons, City/Hwy 147/102 kW-hrs/100 miles

Ice Silver metallic paint and the \$150 bill for the chrome-tipped exhaust, and you get our A3's \$36,645 sticker. We skipped the Driver Assistance package, which includes a backup camera, lane departure warning, and blind-spot monitors, as its \$1,400 sticker price seemed high. Time will tell if we made the right call on that one.

Stay tuned to see how useful the MMI infotainment system really is and how the littlest Audi handles big journeys. These next four months before our S3 and diesel arrive are going to be fun.





2015 BMW M3 Ed Loh



"Thanks to South Bay BMW my 2015 BMW M3's squeaky door seals are no longer. Now let's fix this front left brake judder!" @edloh

I had three specific issues to address at the M3's first service, which I was about 1,500 miles overdue for. First and foremost, I asked the guys at South Bay BMW to diagnose and fix the incessant squeaking coming from inside the vehicle. The brittle creaking over speed bumps and in and out of steeper driveways has been maddening and my chief complaint when anyone asks me about the car. In addition, I informed the service department of an issue that had just cropped up, most recently on the drive into the parking lot: a juddering sensation from the front wheels, particularly at low speeds (below 20 mph) and only when making 90-degree turns. The operating theory I passed along was that the surface of the brake rotor was rubbing against the pads in the calipers under load, near the extremes of the turning radius.

When the car came back, the creaking issue was solved. The cause of the noise was dirty door seals, so all four seals were cleaned and lubricated, and the creaking disappeared. Less easy to fix was the brake judder. The service write-up states it was "operating as designed" and noted that during the road-test diagnosis, "traction control activation during hard left turn with brakes applied." A "client road test

Service life / 8 mo/21,011 mi **Avg CO2 /** 0.96 lb/mi

Energy cons / 166 kW-hrs/100 mi Unresolved problems / Front brake judder Maintenance cost / \$0 (oil change, inspection)

Normal-wear cost / \$0

Base price / \$62,925 As tested / \$78,125

AVERAGE MPG FUEL ECON 20.3 comb.

with shop foreman" was recommended, presumably to demonstrate how traction control could be mistaken for the brake issue, but that drive never happened, and the brake judder (which is felt through the steering wheel and not through the rear wheels) is still an issue.

The final service procedure was the replacement of the engine compartment sound insulator, as part of recall 0051460300. Apparently water can leak into the engine compartment and affect wiring connectors unless the insulating strip is replaced.

Total cost for this service was exactly \$0. A nice touch, even though not every issue was addressed.



The newest member to the *MT* team, photog Robin Trajano, took the F80 home over the weekend and introduced it to grandpa E46.





"Can't wait to test the Colorado Z71 package on some serious trails."@AutoCritic

EPA CITY/HWY/COMB FUEL ECON 17/24/20 MPG BASE PRICE \$34,990 **PRICE AS TESTED \$37,265**

The 2015 Chevrolet Colorado, the Motor Trend Truck of the Year, was delivered in January to serve as the Detroit office's long-term vehicle. Over the next year, we'll test everything this four-wheel-drive, Red Rock Metallic Z71 crew cab has to offer. It's already assisted in one weekend move and was a champ through the heaviest of snowfalls during our brutally cold winter. When I left the airport after one snowstorm, the Colorado easily pulled out of its space while many others spun their wheels and

owners waited for rescue shovels to arrive. This was the first time I needed to put the Colorado in four-wheel drive. It's an easy task-I just turned a knob one click over and waited a moment for the indicator light to notify me when the system was engaged. Then it was just a matter of feathering the accelerator and backing up. No wheelspin. No struggle. Just cleanly driving over the 3-foot-high mound of snow that plows had created.

Our long-term tester includes the 305-hp, 269 lb-ft V-6 with direct-injection mated to a six-speed automatic. Acceleration is smooth, and there's never a desire for more power. The 17-inch wheels riding on Goodyear Wrangler All-Terrain Adventure tires make highway riding soft but still comfortable.

According to the mileage indicator, I've managed to hit the Colorado's combined mileage of 20 mpg through the first 1,000 miles of driving. The only hang-up I've encountered is an intermittent check engine light indicating the closing grille shutters have frozen in place when temperatures dipped below zero. When the temperature outside rose, it turned off.

A lot of features remain to test in real-world driving, including the Z71 off-roading suspension. But that will have to wait for the upcoming months, when we'll also measure performance numbers.





7.4 sec (est)

74.3"

Not yet tested

Not yet tested

Not yet tested

Vehicle Layout Front-engine, 4WD, 5-pass, 4-door truck **Engine** 3.6L/305-hp/269-lb-ft DOHC 24-valve V-6 Transmission 6-speed auto

Curb Weight 4,500 lb (est) Energy Cons, City/Hwy 198/140 kW-hrs/100 miles

LONG-TERM TEST | Updates



2015 Honda Fit EX Erick Ayapana



"Our long-term
Fit has led me to a
deeper appreciation of
volume knobs."
@erkayapana

Service life / 6 mo/8,993 mi Avg C02 / 0.61 lb/mi Energy cons / 106 kW-hrs/100 mi Unresolved problems / None Maintenance cost / \$0 Normal-wear cost / \$0 Base price / \$19,025 As tested / \$19,025

AVERAGE MPG FUEL ECON 31.9 comb.

Don't take volume knobs for granted. It's an unexpected lesson I've learned from our long-term 2015 Honda Fit EX, which has a fancy touchscreen infotainment system that lacks a volume knob. A few readers pointed this out in past updates, and it's something I've obsessed over in recent weeks.

"Needs a volume knob," one reader noted after testing driving a Fit. "Did you end up using the steering wheel controls for adjusting the volume often?" another asked. "I found that was the only sane way to do so instead of the touch slider."

The touch slider is a 1-inch, touch-activated bar located to the left of the 7-inch Display Audio touchscreen. Adjusting the volume is done a number of ways. You can tap the "+" or "-" to increase or decrease the volume. It works relatively well but is slow and tedious. Pressing and holding either button also works, but again, this method is slow.

The quickest method? Use your pointer finger to tap the volume bar and then rapidly swipe it up or down

(imagine scratching a puppy in its crate) until your desired volume is reached. It's as imprecise and silly as it sounds. That said, the readers are right—the physical toggle switch on the steering wheel is the best way to go.

Fortunately, the volume touch slider is the only questionable item on the otherwise great infotainment system. The screen is sharp, the layout is intuitive, and the system is quick and responsive. There's even a handy info page with a short history of fuel economy every time you reset the trip computer. Interestingly enough, there are three physical buttons on the upper edge of the screen (power on/off, CD eject, and screen brightness) that I rarely (if ever) use.

There is hope because Honda hasn't completely ditched the volume knob. The lower-trim Fit LX, for example, has a knob, and so does our long-term, top-of-the-line Accord Hybrid

Touring. So if Honda is on the volume-adjusting fence, then here's my vote for the trusty, old-fashioned knob.



The touch-activated volume slider looks more intuitive than it is. The steering wheel-mounted toggle switch saves the day.





LONG-TERM TEST | Updates



A cargo tray would help keep mud and melted snow from ruining the cargo area's carpet.



2014 Kia Soul Exclaim Karla Sanchez



"I've been seeing Souls painted in Fathom Blue, black, and white all over the place, and they actually lookdare I sav it?-really nice!" @Karlis143

A couple things have happened over the past couple months with our long-term 2014 Kia Soul Exclaim. The first is that it was taken in for its first service a little before the suggested 7,500-mile mark. The Soul's oil and filter were changed, and its tires were rotated for a grand total of \$73.84.

Another first for the Kia Soul was a day at the slopes. Although the Soul only had to transport our snowboards about 5 miles from the cabin to the resorts, the boards still managed to beat up the Soul's interior quite a bit. With the 60/40 split Service life / 10 mo/15,096 mi

Avg CO2 / 0.76 lb/mi

Energy cons / 132 kW-hrs/100 mi

Unresolved problems / None Maintenance cost / \$73.84 (oil change, tire

rotation, inspection)

Normal-wear cost / \$0

Base price / \$21,295 As tested / \$26,635



REAL MPG FUEL ECON 25.6 comb.

rear seats folded down the 40 side, three boards fit just fine, but they left scratches on the back of the passenger seat and on the plastic trim on the door panel. An easy solution would be Kia's roof racks and ski/snowboard attachment, but it's not an option because it has a panoramic sunroof.

Audi and others don't let panoramic sunroofs limit roof rack installation, though. It'd be nice if Kia figured out a system allowing owners to enjoy both.





2014 Ram 1500 Outdoorsman Crew Cab 4x4 Jason Udy



'The Ram 1500's rearview camera and front and rear park sensors make maneuvering the big vehicle a breeze in cramped parking lots." @MT JasonUdv

With more than 20,000 miles on the odometer and our previous issues resolved, it's time to talk pros and cons of the Ram 1500's interior.

The heated, leather-wrapped steering wheel, heated seats, and the remote engine start make chilly mornings more bearable—especially during trips to the Rocky Mountains or Northern California. With its 10-way power driver's seat, the Ram 1500 accommodates drivers of various shapes and sizes, and the lumbar adjustment is appreciated on long road trips.

Service life / 8 mo/19,198 mi Avg CO2 / 1.03 lb/mi

Energy cons / 156 kW-hrs/100 mi Unresolved problems / None

Maintenance cost / \$130.80 (2-DEF refill; 1-oil change, tire rotation, inspection)

Normal-wear cost / \$0

Base price / \$45,905 As tested / \$53,440



REAL MPG FUEL ECON 21.6 comb.

The Ram 1500 can charge up to five devices at once. The audio system plays music via SD, USB, or Bluetooth and is further enhanced by the optional nine-speaker audio system with a subwoofer and amplifier.

I've enjoyed my time living in the Ram 1500 EcoDiesel, but there are a few missing options I wouldn't mind having, namely leather seating with ventilation and the available dual-zone climate control.

The Cherokee easily swallows my new 13-foot kayak. In all seriousness, I have a rack coming.

LONG-TERM TEST | Updates





2014 Jeep Cherokee Trailhawk William Walker



"Clunk! Obviously the nine-speed still needs some fine-tuning." @mt_dubdub

Hopefully the third time is the charm. It seems like every few months our Jeep Cherokee Trailhawk needs to have its transmission re-flashed. We mentioned the first update way back in February, when Rory Jurnecka reported improvements after the transmission programming was updated at the 10,000-mile service.

The second update came when photo editor Julia LaPalme was momentarily stranded when the Jeep failed to shift into gear. While driving back from a photo shoot, the car began to make

Service life / 10 mo/19,296 mi **Avg CO2 /** 1.01 lb/mi

Energy cons / 176 kW-hrs/100 mi Unresolved problems / None

Maintenance cost / \$0 (oil change, tire rotation, inspection)

Normal-wear cost / \$0
Base price / \$30,490 As tested / \$37,265

REAL MPG FUEL ECON 19.2 comb.

odd noises and the check engine light came on, so she exited the freeway. She had to restart the vehicle in order to break it of its glitch, but it continued to make odd noises. The fix came in another re-flash. The transmission, in Jeep's words, had "lost communication with the ECU."

And that brings us to the current update. As we reported in February, Fiat Chrysler Automobiles is preparing yet another update for the nine-speed. Hopefully this time they will get it right.





Thule's Aeroblade roof rack system installed quickly and easily, and it generates minimal wind noise.

2015 Volkswagen GTI Rory Jurnecka



"The GTI provides just enough fun on the daily commute to keep things interesting. And that DSG is a clutchleg saver."

@RoryJurnecka

The GTI has proven itself to be a capable commuter even when stuffed to its wheelwells. As I discovered during weekends of shuttling five people at once, the GTI rides just as well fully loaded as it does with just me behind the wheel.

Many online commenters have voiced their displeasure about our choice of the GTI with a DSG dual-clutch gearbox instead of the manual. To that, I'll say this: I've driven manual GTIs, and yes, they're more involving than the DSG version. But (and this is a major but) my daily round-trip

Service life / 3 mo/3,552 mi **Avg CO2 /** 0.69 lb/mi

Energy cons / 135 kW-hrs/100 mi **Unresolved problems /** None

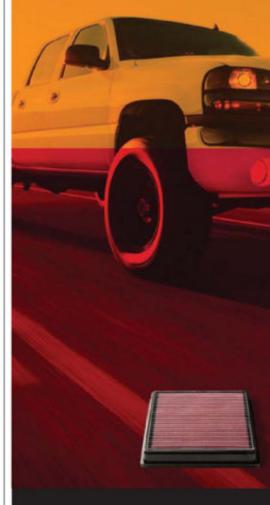
Maintenance cost / \$0 Normal-wear cost / \$0

Base price / \$25,815 As tested / \$33,205

AVERAGE MPG FUEL ECON 24.8 comb.

commute is 32 miles. With Southern California traffic, I'm spending 2 hours in my car every day. Stopping and starting, I've spent plenty of time in manual-equipped cars for this commute, but there's just no way around the fact that an automated transmission is a better proposition as a daily driver; I already have two manual-equipped weekend toys in my garage. Considering that VW's paddle-shift DSG is pretty sporty when I want it to be, I'd say it's a win-win.

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"Hope I don't lose any car guy street cred admitting this, but I'm really gonna miss my Rogue." @C_Seabaugh

In an age of people arguing with Internet strangers about which performance car has the most horsepower or which automaker took the biggest bailout, it's refreshing to drive something as honest, simple, and controversy-free as the Nissan Rogue.

Our Brilliant Silver family-oriented crossover really became a part of *my* family over the past 21,000 miles. Always willing and able, the Rogue took the girl, the dogs, and me to work and the dog park every day, to Northern California to visit family, and to Lake Tahoe to plan our wedding. It was ever-present, always happy to be along for the trip. Memories were made in that Rogue, from getting nicked for (allegedly) speeding by the ever-vigilant California Highway Patrol to enjoying sunshine and warm ocean air with the windows dropped, panoramic roof open, the sound system bumpin', and dogs happily hanging out the windows.

Service life / 12 mo / 21,550 mi Base price / \$30,280

Options / Premium package (\$1,990), auto-dimming mirror (\$310)

Price as tested / \$32,580

Avg fuel econ/CO2 / 23.3 mpg / 0.84 lb/mi Problem areas / Rattling sunroof, power window, tailgate

Maintenance cost* / \$648.61 (4-oil change, inspection; 2-tire rotation; 1-cabin-air filter, engine-air filter, brake fluid change)

Normal-wear cost / \$0 (front brake rotor resurface, pad replacement, battery replacement)
3-year residual value** / \$16,290
Recalls / Front hub bolts, loose lug nuts,

steering shaft bolt

EPA CITY/HWY/COMB FUEL ECON 25/32/28 MPG REAL MPG CITY/HWY/COMB FUEL ECON 20.1/28.2/23.1

*Est, including missed 5,000-mile and warranty-discounted 20,000-mile services. **Automotive Lease Guide data

Although the memories are nice, my favorite thing about the Rogue was how versatile it was. It was just as happy hauling five adults and their gear to the beach as it was being filled from the front seats back with boxes on a long road trip. The sliding rear seats and Divide-N-Hide cargo area really allowed the Rogue to excel at hauling duties. The former allowed us to position the rear seats

right up against the fronts, making it impossible for our dogs to fall off the seats during road trips while maximizing cargo capacity. The latter was just as suited for dividing and organizing groceries as it was swallowing up boxes, suitcases, and even bikes. Talk about efficient storage solutions.

A long road trip in another MT vehicle really drove this point home. I've made the 550-mile journey from





SoCal to NorCal in the Rogue many times, and the Rogue never felt taxed with our usual load of two or three suitcases, two backpacks, dog beds, food, and a handful of other miscellaneous items. Over the Christmas break, I opted to take MT's long-term Jeep Cherokee Trailhawk on the same trip with the same usual load of cargo. I was surprised to find the cargo area filled from floor to ceiling, blocking my view through the back glass. It felt cramped in the Jeep—it never felt that way in the Nissan.

Like any family member, the Rogue was lovable but not without its flaws. It was slow off the line, for instance, making the stoplight race to the turn lane a difficult endeavor. The Rogue also never lived up to the promise of its lofty 25/32/28 mpg city/highway/combined EPA numbers; over its 12 months with us, the Rogue achieved 23.3 mpg, just a hair better than its 23.1 combined Real MPG score. The Rogue's observed fuel economy was bested by our old long-term 2014 Subaru Forester 2.5i Touring (25.6 mpg observed), 2013 Mazda CX-5 Grand Touring 2.0 (26.4 mpg), and 2013 Honda CR-V (26.5 mpg).

The Rogue also had a few minor quality issues during its last 5,000 miles in our garage. Although always mechanically sound, the panoramic sunroof started making sounds above 40 mph. The dealer was able to replicate the issue but couldn't actually fix the rattle as nothing was technically broken. There also were a few electrical gremlins hiding in the left-rear passenger door window and in the tailgate. On two or three occasions, the left-rear

window would refuse to rise after being lowered, randomly coming back into action again after a period of sitting. The power-operated tailgate also went haywire, refusing to stay open and even causing damage to one of the taillights. The window and tailgate issues were addressed by replacing a control module and the battery at no cost during its 20,000-mile service.

Speaking of service, after accidentally missing its first, the Rogue made three scheduled stops at our local Nissan dealer for service. These three oil changes, two tire rotations, cabin air filter and engine air filter replacements, and a brake fluid change set us back \$329.88. Although we got a break on the 20,000-mile service because of the warranty repairs being done at the same time, had we paid for all four scheduled service stops, we'd have spent \$648.61 servicing the Rogue. We've had a fair amount of family crossovers pass through our garage over the past few years, and the Rogue is on the high-end of the maintenance-cost spectrum. Our Forester cost us nothing to service, our CR-V \$220.66, and our CX-5 \$456.21.

Over my past half-dozen or so months with the Nissan Rogue, the question I most often got about it from friends, family, and neighbors was, "Would you buy one?" Personally, no; it's overkill for what I need, and the Lexus RX-lookalike styling isn't my cup of tea. But would I recommend it to someone in the market for a crossover SUV? In a heartbeat. Without hesitation. I truly loved my time in the Rogue and know that it'd just as easily make itself part of someone else's family as it did mine.



2014 Nissan Rogue SL AWD POWERTRAIN/CHASSIS **DRIVETRAIN LAYOUT** Front-engine, AWD I-4, aluminum block/head **ENGINE TYPE** VALVETRAIN DOHC, 4 valves/cyl DISPLACEMENT 151.8 cu in/2,488cc 10.0:1 **COMPRESSION RATIO POWER (SAE NET)** 170 hp @ 6,000 rpm 175 lb-ft @ 4,400 rpm **TORQUE (SAE NET)** REDLINE 6,200 rpm WEIGHT TO POWER 21.4 lb/hp **TRANSMISSION** Cont. variable auto 5.69:1/2.15:1 AXLE/FINAL-DRIVE RATIO Struts, coil springs, anti-roll bar; multilink, coil springs, SUSPENSION, FRONT; REAR

	anti-roll bar
STEERING RATIO	17.1:1
TURNS LOCK-TO-LOCK	3.0
BRAKES, F;R	11.8-in vented disc; 11.7-in vented disc, ABS
WHEELS	7.0 x 18-in, cast aluminum
TIRES	225/60R18 100H M+S Dunlop Grandtrek ST30

106.5 in
62.8/62.8 in
182.3 x 72.4 x 66.3 in
7.4 in
17.4/25.0 deg
37.4 ft
3,633 lb
57/43%
1,000 lb
5
39.5/36.6 in
43.0/37.9 in
56.6/55.9 in
70.0/32.0 cu ft

TEST DATA	
ACCELERATION TO MPH	
0-30	3.3 sec
0-40	4.9
0-50	6.8
0-60	9.1
0-70	12.0
0-80	15.7
0-90	20.1
PASSING, 45-65 MPH	4.7
QUARTER MILE	17.0 sec @ 83.2 mph
BRAKING, 60-0 MPH	118 ft
LATERAL ACCELERATION	0.77 g (avg)
MT FIGURE EIGHT	28.9 sec @ 0.58 g (avg)
TOP-GEAR REVS @ 60 MPH	2,000 rpm

IUP-GEAK KEVS @ 60 MPH	2,000 rpm
CONSUMER INFO	
BASE PRICE	\$30,280
PRICE AS TESTED	\$32,580
STABILITY/TRACTION CONTROL	Yes/yes
AIRBAGS	Dual front, front side, f/r curtain
BASIC WARRANTY	3 yrs/36,000 miles
POWERTRAIN WARRANTY	5 yrs/60,000 miles
ROADSIDE ASSISTANCE	3 yrs/36,000 miles
FUEL CAPACITY	14.5 gal
EPA CITY/HWY/COMB ECON	25/32/28 mpg
ENERGY CONS, CITY/HWY	135/105 kW-hrs/100 miles
CO2 EMISSIONS	0.70 lb/mile
REAL MPG CITY/HWY/COMB	20.1/28.2/23.1 mpg
RECOMMENDED FUEL	Unleaded regular

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"The legacy car-building establishment is ripe for overturning by fast-moving tech companies versed in silicon, not steel." @MT_Reynolds

I've known Alec Brooks longer than either of us can precisely remember, but during a recent lunch he mentioned something that startled me. "Did I ever tell you that I was once interviewed to be the Model S' chief engineer?" I put my coffee cup down as my journalist's antenna rose.

Brooks is a pioneer of the modern electric car who once gave me a ride in the GM Impact, the catalyst that convinced GM to build the EV1. "I immediately got into an argument with Musk, and that was that," he said. "But I worked there for a while anyway as director of vehicle technology during the Model S' early planning." Astonishingly, Brooks had yet to drive the final product. At the conclusion of our lunch I slipped him our long-term car's keys for a week I was about to be away on a trip. What would be the verdict of the Model S' almost-chief engineer? I'll get back to that.

Service life / 17 mo / 38,054 mi **Base price /** \$94,900

Options / '+' suspension, wheel, and tire upgrade (\$6,500); tech package (\$4,250); third-row seats (\$2,500); air suspension (\$2,250); dual charger (\$2,000)

Price as tested / \$112,400 Avg fuel econ* / 86.2 mpg-e

Problem areas / Motor replacement, steering knuckle replacement, sunroof

Maintenance cost / \$0 Normal-wear cost / \$1,760 (new tires) 3-year residual value** / \$53,307

Recalls / None

EPA CITY/HWY/COMB FUEL ECON 88/90/89 MPG-E AVERAGE MPG FUEL ECON* 86.2 MPG-E

*Performed in the manner of Real MPG testing.
**Based on Tesla resale price guarantee

In reality, the Model S is a car with as many verdicts as it represents groundbreaking firsts: It's the first EV with gas-competitive range. The first mass-produced EV with shattering performance. The first you can genuinely road-trip via its worldwide, 393-station network of 2,146 120-kilowatt Superchargers. The first to embrace over-the-air

software updates. ... Let me inhale here. ... The first with a gigantic, reconfigurable multi-touchscreen. And the first to challenge the powerful dealership establishment with company-owned Tesla stores in fashionable malls (designed by George Blankenship, who created the Apple Store). Being a Silicon Valley carmaker means not comprehending what you can't do.

Many verdicts. Let's start with reliability. Besides some simple maintenance, our car's only unscheduled attention was due to a flat tire on the 405 (the "Tesla Rangers" arrived in 45 minutes and swapped on a spare), a nail in another, and a defiantly squeaky sunroof that eventually just squeaked itself out. The technicians often proactively updated the car to a startling degree, including new suspension bushings and replacing a steering knuckle when they noticed it was loose, and the power unit itself when they heard a clicking sound in the singlespeed reduction gears. All for free. Our communications were via quick texts on a first-name basis (Hi, Mark!) and frankly, the whole thing was breathtakingly Apple Store Genius Bar compared to the Victorian horrors of traditional dealerships.

OK, but isn't that replaced motor/tranny unit a big deal? Chin scratching. To Tesla's technicians, it really seemed like it was just another plug-and-play









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2013 Tesla Model S P85+ POWERTRAIN/CHASSIS

DRIVETRAIN LAYOUT	Rear-motor, RWD
MOTOR TYPE	AC induction electric motor
BATTERY TYPE	Liquid-cooled lithium-ion
POWER (SAE NET)	416 hp @ 5,000 rpm
TORQUE (SAE NET)	443 lb-ft @ 0 rpm
REDLINE	16,000 rpm
WEIGHT TO POWER	11.4 lb/hp
TRANSMISSION	1-speed automatic
AXLE/FINAL-DRIVE RATIO	9.73:1/9.73:1
SUSPENSION, FRONT; REAR	Control arms, air springs, anti-roll bar; multilink, air springs, anti-roll bar
STEERING RATIO	13.0:1
TURNS LOCK-TO-LOCK	2.3
BRAKES, F;R	14.0-in vented disc; 14.4-in vented disc, ABS
WHEELS, F;R	8.5 x 21.0-in; 8.5 x 21.0-in, cast aluminum
TIRES, F;R	245/35R21 101Y; 265/35R21 101Y Michelin Pilot Sport PS2

DIMENSIONS	
WHEELBASE	116.5 in
TRACK, F/R	65.4/66.9 in
LENGTH X WIDTH X HEIGHT	196.0 x 77.3 x 56.5 in
TURNING CIRCLE	37.0 ft
CURB WEIGHT	4,731 lb
WEIGHT DIST, F/R	46/54%
SEATING CAPACITY	5+2
HEADROOM, F/R	38.8/35.3 in
LEGROOM, F/R	42.7/35.4 in
SHOULDER ROOM, F/R	57.7/55.0 in
CARGO VOLUME	5.3 cu ft (f), 26.2 cu ft (rear, 3rd-row seat removed)

TEST DATA	
ACCELERATION TO MPH	
0-30	1.7 sec
0-40	2.3
0-50	3.1
0-60	4.0
0-70	5.1
0-80	6.5
0-90	8.2
0-100	10.5
PASSING, 45-65 MPH	1.9
QUARTER MILE	12.7 sec @ 107.8 mph
BRAKING, 60-0 MPH	108 ft
LATERAL ACCELERATION	0.92 g (avg)
MT FIGURE EIGHT	25.3 sec @ 0.74 g (avg)
TOP-GEAR REVS @ 60 MPH	7,350 rpm

CONSUMER INFO	
STABILITY/TRACTION CONTROL	Yes/yes
AIRBAGS	Dual front, front side, f/r curtain, front knee
BASIC WARRANTY	4 yrs/50,000 miles
POWERTRAIN WARRANTY	8 yrs/unlimited
ROADSIDE ASSISTANCE	4 yrs/50,000 miles
ENERGY CAPACITY	85 kW-hrs
EPA CITY/HWY/COMB ECON	88/90/89 mpg-e
ENERGY CONS, CITY/HWY	38/37 kW-hrs/100 miles*
CO2 EMISSIONS, COMB	0 lb/mi (at vehicle)
RANGE	265 mi (EPA), 238 mi (MT observed)
FUEL	110-v plug: 1.4-kW AC; 240- v wall charger: 10 or 20 kW AC; fast charge: 120-kW DC

*Gas-equivalent





component. Easier to swap than open up and fiddle with. (They later get them refurbished, so they're not thrown away.) For traditional gas-powered-car guys, the engine is the high altar within the automotive cathedral. For Tesla, it's a part number.

Wear and tear. When we originally ordered our car I'd asked for a simple P85 with the smooth-riding tall-sidewall tires and sans the sunroof. A response soon arrived from Elon Musk's secretary. "Elon read your request and is sending a P85+ with a sunroof." Their fastest car.

The car's lightning reflexes rendered my fellow road-goers bugs in amber, me a laser-beam pinball through them. Did its sizzle translate to the track? We lapped it twice at Mazda Raceway Laguna Seca and once at Streets of Willow, and each time the car lost power toward lap's end as the software stepped in to protect the battery from rising temperatures—even defying my comical attempt to pre-freeze it with 17 ice bags stuffed underneath. (At least it felt pretty "cool" for 9/10 of a lap.) The motor's double whammy of instant power and lift-throttle regen wore the rear tires guickly, though not out of line for such a powerful, heavy sedan, according to our friends at Tire Rack. On top of that, the slim-profile Michelins left the wide rims fairly whacked up, for which I was as guilty as anybody.

Traveling. Almost everywhere I wanted to go proved to be Supercharger-reachable: to the Monterey, California, area six times, to the mountain town of Julian, California, for its famous apple pie, and on our last grand voyage, from Willow Springs Raceway to Phoenix. Unlike gas-car road-going, Tesla travel is closer to hopscotching between sparse landing strips in a light plane. You absolutely have to put it down at specific spots (for about 20

minutes of zero-cost juicing before the next jump) and then make the best you can of the pause. There's a Zen-like quality to the repeated pattern, though. In the early days (hah, I love saying that!) drivers would jump out of their cars and greet one another like cousins who'd never met. Now, they warily eye each other's charging progress or bury their noses in books. You should see the route calculations filling my notebooks for every time I strayed from the charging network. (Note to Tesla: Finally! Just after our car leaves, you announce Update 6.2 and its Apple-slick trip planning software! Ack!) Over its 38,000-mile stay, the battery showed little appreciable degradation; its everyday range was 175 miles (212 if I was conservative), its fully charged range averaged about 203 miles (238 if conservative), and I never ran out of juice.

Oh, and Alec Brooks' verdict after his week behind its wheel? "Very impressed. I didn't think I'd like the big screen, but its size really helps in targeting buttons, and wow, the nav map is great." Then the total technoid emerges: "I really appreciate how data is displayed in the gauges—you can tell they were created by engineers. In retrospect, the car I was originally arguing for was cheaper, smaller, less powerful and with a little less range—actually, what sounds more like the Model 3!"

My verdict? As the Great Wallenda of the modern technological tightrope, Musk has rightfully lived in the spotlight as his audience gasps and cheers with his every step. In 12 short years, tiny Tesla has accomplished the near-impossible, and our 17 months in the car have been nothing less than an everyday reminder that it springs from the imagination of a guy whose tightrope leads all the way to Mars.





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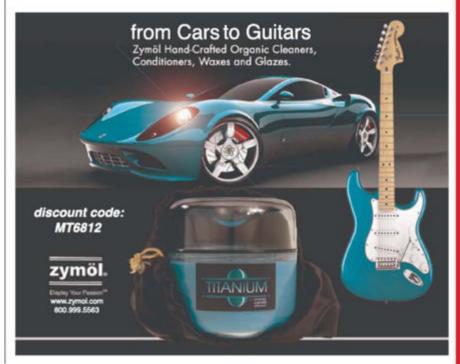
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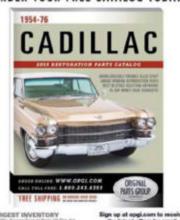
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The Big Picture



THE FINAL FRONTIER SUVS GO ULTRA-LUXE

"We will solve the problem that you cannot spend more than \$160,000 on an SUV," deadpanned Bentley boss Wolfgang Dürheimer about the company's forthcoming Bentayga off-roader. Dürheimer was only half-joking: It appears there are indeed enough people in the world willing to spend four times or more the average annual wage in America on an SUV to justify Bentley spending hundreds of millions of dollars developing one for them.

Bentley. First World problems solved here. Dürheimer expects the Bentayga to boost Bentley's global sales to 15,000 vehicles a year when it launches in 2016. And while that total is still only about two-thirds the total number of vehicles Toyota sells worldwide every single day, it represents a 50 percent increase in Bentley's output. Small wonder, then, that other ultra-luxe brands are jumping on the SUV bandwagon. Daimler is planning a Mercedes-Maybach version of the next-gen Mercedes-Benz GL. Lamborghini has already shown potential customers its Urus SUV. Aston Martin's Geneva show concept, the DBX, will morph into a sporty four-door hatchtype SUV along the lines of an upscale Range Rover Evoque. And Rolls-Royce has announced it will build a "high-bodied car" that "can cross any terrain," which sounds like how they'd describe an SUV on "Downton Abbey."

A vehicle genre that began with the Jeep Grand Wagoneer in the early 1960s and has

since spread worldwide is about to cross the final frontier.

Not that long ago the DNA all SUVs shared with the seminal off-roader, the World War II Jeep, was fairly obvious; they were wagon-style, four-wheel-drive, off-road vehicles wrapped in a veneer of car-type luxury, with stuff like carpets, sound systems, air-conditioning, nice seats, alloy wheels, and power windows tacked on. With rare exceptions—most notably, Britain's Range Rover—they were little more than trucks in a tux, and drove that way. These days, though, about the only thing many modern SUVs share with traditional off-roaders is high ground clearance, a high seating position, and a moderately flexible interior package. Everything else—even all-wheel drive in some cases—is optional.

Ironically, as the attributes that define them have become less ... definitive, SUVs have become a much more viable vehicle type for automakers whose laserlike focus on their brand would have in the past prevented them from even considering the idea. Like Lamborghini, Rolls-Royce, and Bentley.

Lamborghini created the LM002 as a military vehicle concept, so there is perhaps precedent for the Urus; Lawrence of Arabia once said the Rolls-Royce armored cars—built on Silver Ghost chassis—he took through the desert in the Middle East during World War I were "more valuable than rubies," so the idea of an

all-terrain vehicle carrying the Spirit of Ecstasy mascot isn't entirely far-fetched; the Sultan of Brunei had Bentley hand-build six SUVs in the mid-'90s, so the Bentayga might not be an outrageous leap of faith. But these are tenuous links at best, obscure factoids beloved of car geeks rather than a credible basis for launching whole new vehicle lines.

SUVs will work for these ultra-luxe brands for the same reason they work for Chevy and Ford and Toyota: People like riding high so they get a good view in the traffic, they like something they can drive in all weather on all roads, and they like a vehicle that offers more passenger and load-carrying flexibility than a regular sedan without looking like a station wagon or a minivan.

The folks at Rolls-Royce and Bentley see SUVs as additive to their businesses—existing customers will buy one to keep alongside their Phantoms and Mulsannes—while the Urus and DBX will likely bring people to Lamborghini and Aston Martin who would never have considered owning one of their sports cars. And, more important, all have the potential to deliver healthy profit margins because the capability their owners want can be largely delivered via electronics and software rather than unique, expensively engineered, Rubicon-busting hardware.

One potential Bentayga owner summed it up this way: "If you can afford a Bentley SUV, your boat is too big to tow."



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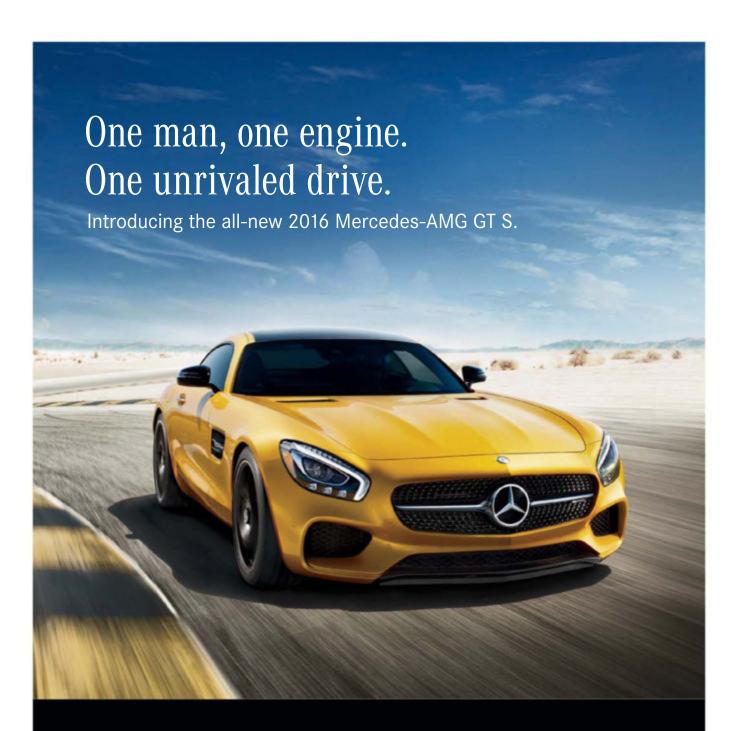
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